NATURAL HISTORY

OF

BIRDS, FISH,

INSECTS, AND REPTILES.

EMBELLISHED WITH

UPWARDS OF TWO HUNDRED ENGRAVINGS.

IN FIVE VOLUMES.

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NATURAL HISTORY

OF

BIRDS, FISH, REPTILES, &c.

OF SMALL BIRDS OF THE CRANE KIND.

THE variety of birds which come under this deſcription are exceedingly numerous both in this and almoſt every other clime; Briſſon has enumerated more than one hundred, ſome authors have ſtated them to amount to near three; but out of that number many are found to differ only in the length of their body, the colour of ſome particular feathers, or ſome ſuch ſlight diſtinction. In their manners and habits, however, they are very ſimilar, ſo much ſo indeed that we might almoſt aſſert that the characteriſtics of one would nearly exhibit the Natural Hiſtory of the whole, and therefore it is that we ſhall follow the example of a modern author, and ſpeak of their nature and habits in

general, to avoid that tedious repetition which would inevitably occur, by treating of them as they related to each bird individually, at leaſt of ſuch as are known; for notwithſtanding the laborious reſearches of the moſt eminent naturaliſts, there remains a multiplicity of the feathered race, natives of both the old and new continents, of which no particulars have been acquired beyond their figure, ſize, and plumage. Many cabinets have been ſelected by the curious, and who to each bird have been able to apply a name by the aſſiſtance of the nomenclators, but by doing of which it has not unfrequently happened that two very diſtinct birds, from a ſimilarity of plumage, have gone under one common appellation in two different collections, and which kind of error muſt certainly continue to occur among thoſe with whom we are ſo little acquainted; nor would ſuch circumſtances have ever been of any conſequence, had not ſome of the owners commenced authors, and thus erroneouſly handed them down to poſterity, to the no ſmall perplexity of thoſe who make an inveſtigation into the varieties of nature their ſtudy. Added to this is the practice of the exhibitors of birds and beaſts, who, from ignorance, or from motives

of

of intereſt, give an animal that name which they think moſt likely to anſwer their purpoſe; a fact which frequently occured to M. de Buffon, and who gives it as his opinion that many ſpecies have been thus multiplied by mere varieties. Such being the caſe, the entering into a tedious deſcription of a long liſt, of which nothing but their names and colours are known, could be very little ſatisfactory; for in this tribe we ſhould find them almoſt as numerous as in the ſparrow, and many of their pretended diſtinctions being only different ſhades in their plumage. The moſt particular, however, we ſhall point out, after having given in the words of a celebrated author, a general view of their habits and manners.

"All the birds in this claſs poſſeſs many "marks in common; though ſome have pecu- "liarities that deſerve regard. They are all "bare of feathers above the knee, or above "the heel, as ſome naturaliſts chuſe to expreſs "it. In fact, that part which I call the knee, "if compared with the legs of mankind, is "analogous to the heel: but, as it is com- "monly conceived otherwiſe, I have conform- "ed to the general apprehenſion. I ſay, there- "fore, that all theſe birds are bare of feathers

" above the knee; and in ſome they are want-
" ing half way up the thigh. The nudity in
" that part, is partly natural, and partly pro-
" duced by all birds of this kind habitually
" wading in water. The older the bird, the
" barer are its thighs; yet even the young
" ones have not the ſame downy covering
" reaching ſo low as the birds of any other
" claſs. Such a covering there would rather
" be prejudicial, as being continually liable to
" get wet in the water.

" As theſe birds are uſually employed rather
" in running than in flying, and as their food
" lies entirely upon the ground, and not on
" trees, or in the air, ſo they run with great
" ſwiftneſs for their ſize, and the length of their
" legs aſſiſt their velocity. But as, in ſeeking
" their food, they are often obliged to change
" their ſtation; ſo alſo are they equally ſwift
" of wing, and traverſe immenſe tracts of
" country without much fatigue.

" It has been thought by ſome, that a part
" of this claſs lived upon an oily ſlime, found
" in the bottoms of ditches and of weedy pools;
" they were thence termed, by Willoughby,
" Mud-ſuckers; but later diſcoveries have
" ſhewn that, in theſe places, they hunt for the
" caterpillars,

" caterpillars, worms, and inſects. From " hence, therefore, we may generally aſſert, " that all birds of this claſs live upon animals " of one kind or another. The long billed " birds ſuck up worms and inſects from the " bottom; and thoſe furniſhed with ſhorter " bills, pick up ſuch inſects as lie nearer the " ſurface of the meadow, or among the ſands " on the ſea-ſhore.

" Thus the curlew, the wood-cock, and the " ſnipe, are ever ſeen in plaſhy brakes, and " under covered hedges, aſſiduouſly employed " in ſeeking out inſects in their worm ſtate, " and it ſhould ſeem, from their plumpneſs, " that they find a plentiful ſupply. Nature, " indeed, has furniſhed them with very con- " venient inſtruments for procuring this kind " of food. Their bills are made ſufficiently " long for ſearching; but ſtill more, they are " endowed with an exquiſite ſenſibility at the " point, for feeling their proviſions. They are " furniſhed with no leſs than three pair of " nerves, equal almoſt to the optic nerves in " thickneſs; which paſs from the roof of the " mouth, and run along the upper chap to the " point.

" Nor

" Nor are thoſe with ſhorter bills, and deſti-
" tute of ſuch convenient inſtruments, without
" a proper proviſion made for procuring their
" ſubſiſtence. The lapwing, the ſand-piper
" and the red-ſhank, run with ſurpriſing rapi-
" dity along the ſurface of the marſh or the ſea-
" ſhore, quarter their ground with great dexte-
" rity, and leave nothing of the inſect kind that
" happens to lie on the ſurface. Theſe, how-
" ever, are neither ſo fat nor ſo delicate as the
" former; as they are obliged to toil more for
" a ſubſiſtence, they are eaſily ſatisfied with
" whatever offers; and their fleſh often con-
" tracts a reliſh from what has been their
" lateſt, or their principal food.

" Moſt of the birds formerly deſcribed, have
" ſtated ſeaſons for feeding and reſt: the eagle
" kind prowl by day, and at evening repoſe;
" and the owl kind by night, keeping unſeen
" in the day-time. But theſe birds, of the
" crane kind, ſeem at all hours employed; they
" are ſeldom at reſt by day; and, during the
" whole night ſeaſon, every meadow and marſh
" reſounds with their different calls, to court-
" ſhip or to food. This ſeems to be the time
" when they leaſt fear interruption from man;
" and at this ſeaſon, they appear more aſſidu-
" ouſly

" ouſly employed, both in providing for their " preſent ſupport, and continuing that of poſte- " rity. But unfortunately for them, this is alſo " the ſeaſon when the inſidious fowler ſteals in " upon their occupations, and fills the whole " meadow with terror and deſtruction.

" As all of this kind live entirely in waters, " or at leaſt among watry places, they ſeem pro- " vided by nature with a warmth of conſtitu- " tion to fit them for that cold element. They " reſide, by choice, in the coldeſt climates; " and as other birds migrate here in our ſum- " mer, their migrations hither are moſtly in the " winter. Even thoſe that reſide among us the " whole ſeaſon, retire in ſummer to the tops " of our bleakeſt mountains; where they " breed and bring down their young, when " the cold weather ſets in.

" Moſt of them, however, migrate and re- " tire to the polar regions: as thoſe that remain " behind in the mountains, and keep with us " during ſummer, bear no proportion to the " quantity which in winter haunt our marſhes " and low grounds. The ſnipe ſometimes builds " here; and the neſt of the curlew is ſometimes " found in the plaſhes of our hills; but the " number of theſe is very ſmall; and it is moſt

" probable

" probable that they are only ſome ſtragglers " who, not having ſtrength or courage ſuffi- " cient for the general voyage, take up from " neceſſity their habitation here.

" In general, during ſummer, this whole claſs " either chuſe the coldeſt countries to retire to, " or the coldeſt and the moiſteſt part of ours to " breed in. The curlew, the woodcock, the " ſnipe, the godwit, the grey plover, the green, " and the long-legged plover, the knot and the " turnſtone, are rather the gueſts than the na- " tives of this iſland. They viſit us in the be- " ginning of winter, and forſake us in the " ſpring. They then retire to the mountains " of Sweden, Poland, Pruſſia, and Lapland to " breed. Our country, during the ſummer " ſeaſon, becomes uninhabitable to them. The " ground parched up by the heat; the ſprings " dried away; and the vermicular inſects al- " ready upon the wing; they have no means of " ſubſiſting. Their weak and delicately pointed " bills are unfit to dig into a reſiſting ſoil; and " their prey is departed, though they were able " to reach its retreats. Thus, that ſeaſon " when nature is ſaid to teem with life, and to " put on her gayeſt liveries, is to them an in- " terval of ſterility and famine. The coldeſt

" mountains

" mountains of the north are then a preferable
" habitation; the marſhes there are never to-
" tally dried up; and the inſects are in ſuch
" abundance, that, both above ground and un-
" derneath, the country ſwarms with them. In
" ſuch retreats, therefore, theſe birds would
" continue always; but that the froſts, when
" they ſet in, have the ſame effect upon the
" face of the landſcape, as the heats of ſummer.
" Every brook is ſtiffened into ice; all the earth
" is congealed into one ſolid maſs; and the
" birds are obliged to forſake a region where
" they can no longer find ſubſiſtence.

" Such are our viſitants. With regard to
" thoſe which keep with us continually, and
" breed here, they are neither ſo delicate in
" their food, nor perhaps ſo warm in their con-
" ſtitutions. The lap-wing, the ruff, the red-
" ſhank, the ſand-piper, the ſea-pie, the Nor-
" folk plover, and the ſea-lark, breed in this
" country, and, for the moſt part, reſide here.
" In ſummer they frequent ſuch marſhes as are
" not dried up in any part of the year; the
" Eſſex hundreds, and the fens of Lincolnſhire.
" There in ſolitudes, formed by ſurrounding
" marſhes, they breed and bring up their young.
" In winter they come from their retreats, ren-

" dered uninhabitable by the flooding of the
" waters; and ſeek their food about our ditches
" and marſhy meadow-grounds. Yet even of
" this claſs, all are wanderers upon ſome oc-
" caſions; and take wing to the northern cli-
" mates, to breed and find ſubſiſtence. This
" happens when our ſummers are peculiarly
" dry, and when the fenny countries are not
" ſufficiently watered to defend their retreats.

" But though this be the uſual courſe of na-
" ture, with reſpect to theſe birds, they often
" break through the general habits of their
" kind; and as the lap-wing, the ruff, and the
" ſand-piper, are ſometimes ſeen to alter their
" manners, and to migrate from hence, inſtead
" of continuing to breed here; ſo we often find
" the wood-cock, the ſnipe, and the curlew,
" reſide with us during the whole ſeaſon, and
" breed their young in different parts of the
" country. In Caſewood, about two miles
" from Tunbridge, as Mr. Pennant aſſures us,
" ſome wood-cocks are ſeen to breed annually.
" The young have been ſhot there in the be-
" ginning of Auguſt: and were as healthy and
" vigorous as they are with us in winter, tho'
" not ſo well taſted. On the Alps, and other
" high mountains, ſays Willoughby, the wood-

" cock

" cock continues all ſummer. I myſelf have " fluſhed them on the top of Mount Jura, in " June and July, the eggs are long, of a pale " colour, and ſtained with deeper ſpots and " clouds. The neſts of the curlew and the " ſnipe are frequently found; and ſome of " theſe perhaps never entirely leave this iſ- " land.

" Thus it appears that the ſame habits are in " ſome meaſure common to all; but in neſt- " ling, and bringing up their young, one method " takes place univerſally. As they all run and " feed upon the ground, ſo they are all found " to neſtle there. The number of eggs gene- " rally to be ſeen in every neſt, is from two to " four; never under, and very ſeldom exceed- " ing. The neſt is made without any art; but " their eggs are either laid in ſome little depreſ- " ſion of the earth, or on a few bent and long " graſs, that ſcarcely preſerves them from the " moiſture below. Yet ſuch is the heat of the " body of theſe birds, that the time of their in- " cubation is ſhorter than with any other of " the ſame ſize. The magpie, for inſtance, " takes twenty-one days to hatch its young, but " the lapwing takes but fourteen. Whether the " animal oil, with which theſe birds abound,

" gives them this ſuperior warmth, I cannot " tell, but there is no doubt of their quick in- " cubation.

" In their ſeaſons of courtſhip, they pair as " other birds; but not without violent conteſts " between the males, for the choice of the fe- " male. The lapwing and the plover are often " ſeen to fight among themſelves; but there is " one little bird of this tribe, called the *ruff*, " that has got the epithet of the *fighter*, merely " from its great perſeverance and animoſity on " theſe occaſions. In the beginning of ſpring, " when theſe birds arrive among our marſhes, " they are obſerved to engage with deſperate " fury againſt each other; it is then that the " fowlers, ſeeing them intent on mutual de- " ſtruction, ſpread their nets over them, and " take them in great numbers. Yet even in " captivity their animoſity ſtill continues: the " people that fat them up for ſale, are obliged " to ſhut them up in thoſe dark rooms; for " if they let ever ſo little light in among them, " the turbulent priſoners inſtantly fall to fight- " ing with each other, and never ceaſe till one " has killed its antagoniſt, eſpecially, ſays Wil- " loughby, if any body ſtands by. A ſimilar " animoſity, though in a leſs degree, prompts

" all

" all this tribe; but when they have paired,
" and begun to lay, their contentions are then
" over.

" The place theſe birds chiefly chuſe to breed
" in, is in ſome iſland ſurrounded with ſedgy
" moors, where men ſeldom reſort; and in ſuch
" ſituations I have often ſeen the ground ſo
" ſtrewed with eggs and neſts, that one could
" ſcarce take a ſtep, without treading upon ſome
" of them. As ſoon as a ſtranger intrudes upon
" theſe retreats, the whole colony is up, and an
" hundred different ſcreams are heard from
" every quarter. The arts of the lapwing to
" allure men or dogs from her neſt, are per-
" fectly amuſing. When ſhe perceives the
" enemy approaching, ſhe never waits till they
" arrive at her neſt, but boldly runs to meet
" them: when ſhe has come as near them as
" ſhe dares to venture, ſhe then riſes with a
" loud ſcreaming before them, ſeeming as if
" ſhe were juſt fluſhed from hatching; while
" ſhe is then probably a hundred yards from
" the neſt. Thus ſhe flies, with great cla-
" mour and anxiety, whining and ſcreaming
" round the invaders, ſtriking at them with her
" wings, and fluttering as if ſhe were wounded.
" To add to the deceit, ſhe appears ſtill more
" clamorous,

" clamorous, as more remote from the neſt.
" If ſhe ſees them very near, ſhe then ſeems
" to be quite unconcerned, and her cries ceaſe,
" while her terrors are really augmenting. If
" there be dogs, ſhe flies heavily at a little diſ-
" tance before them, as if maimed; ſtill voci-
" ferous and ſtill bold, but never offering to
" move towards the quarter where her treaſure
" is depoſited. The dog purſues, in hopes
" every moment of ſeizing the parent, and by
" this means actually loſes the young; for the
" cunning bird, when ſhe has thus drawn him
" off to a proper diſtance, then puts forth her
" powers, and leaves her aſtoniſhed purſuer to
" gaze at the rapidity of her flight. The eggs
" of all theſe birds are highly valued by the lux-
" urious; they are boiled hard, and thus ſerved
" up, without any further preparation.

" As the young of this claſs are ſoon hatched,
" ſo, when excluded, they quickly arrive at ma-
" turity. They run about after the mother as
" ſoon as they leave the egg; and being covered
" with a thick down, want very little of that
" clutching which all birds of the poultry kind
" that follow the mother, indiſpenſably require.
" They come to their adult ſtate long before
" winter; and then flock together, till the

" breeding

" breeding ſeaſon returns, which for a while
" diſſolves their ſociety.

" As the fleſh of almoſt all theſe birds is
" in high eſtimation, ſo many methods have
" been contrived for taking them. That uſed
" in taking the ruff, ſeems to be the moſt ad-
" vantageous; and it may not be amiſs to de-
" ſcribe it. The Ruff, which is the name of
" the male, the Reeve that of the female, is
" taken is nets about forty yards long, and
" ſeven or eight feet high. Theſe birds are
" chiefly found in Lincolnſhire and the Iſle
" of Ely, where they come about the latter
" end of April, and diſappear about Michael-
" mas. The male of this bird, which is
" known from all others of the kind by the
" great length of the feathers round his neck,
" is yet ſo various in his plumage, that it
" is ſaid, no two ruffs were ever ſeen totally
" of the ſame colour. The nets in which
" theſe are taken, are ſupported by ſticks,
" at an angle of near forty-five degrees, and
" placed either on dry ground, or in very
" ſhallow water, not remote from reeds;
" among theſe the fowler conceals himſelf, till
" the birds, enticed by a ſtale or ſtuffed bird,
" come under the nets: he then, by pulling
" a ſtring,

" a ſtring, lets them fall, and they are taken;
" as are godwits, knots and grey plovers, alſo
" in the ſame manner. When theſe birds are
" brought from under the net, they are not
" killed immediately, but fattened for the ta-
" ble, with bread and milk, hemp-ſeed, and
" ſometimes boiled wheat; but if expedition be
" wanted, ſugar is added, which will make them
" a lump of fat in a fortnight's time."

Such are the general remarks which apply to nearly the whole extenſive tribes of birds that we have now under conſideration; but though approaching ſo near each other, in their habits and manners, many of the principal ones are nevertheleſs very different; to thoſe principal, however, are attached a number of affinities and varieties which, by that ſlow and almoſt imperceptible degree, which is univerſally to be diſcovered through animated nature, they become ſo nearly allied, as to defy the moſt acute obſerver to point out where the diſtinctions begin. We ſhall therefore proceed to a deſcription of the heads of each family, as from thence may be drawn a perfect idea of the whole race.

THE CURLEW.

LATHAM enumerates eleven ſpecies of this bird, differing very much in ſize, the longeſt meaſuring about twenty-five inches, and ſometimes weighing thirty-ſix ounces. Theſe birds fly in conſiderable flocks, and are well known upon the ſea-coaſts in moſt parts, where, and in the marſhes, they frequent in the winter, feeding on worms, frogs, and all kinds of marine inſects. In April, or the beginning of May, they retire into the mountainous and unfrequented parts of the ſea-ſhore, where they breed, and do not return again till the approach of winter. There have been ſome advocates in favour of the fleſh of this bird, but in general it is ſtrong, rank, and fiſhy. It has a long black bill, much curved or arched, about eight fingers only, and beginning to bend a little

downwards about three fingers from the head. The middle parts of the feathers on the head, neck, and back, are black; the borders or outſides aſh-coloured, with an intermixture of red; and thoſe between the wings and back are of a moſt beautiful gloſſy blue, and ſhine like ſilk. The rump and the belly are white. The feet are divided, but joined by a little membrane at the root. The tongue is very ſhort, conſidering the length of the bill, and bears ſome reſemblance to an arrow.

The female is ſomewhat larger than the male, which is commonly called the Jack Curlew, and the ſpots with which her body is covered almoſt all over, is more inclining to a red.

The *Stone Curlew* differs very much from the former. It is a pretty large bird, being from the extenſion of the point of each wing, a full yard, and has a ſtraight ſharp pointed bill, near two inches long, black towards the noſtrils, the other parts yellow; the eyes and the edges of their lids are yellow, there is a bare place under each eye, that appears of a ſort of yellowiſh green, the breaſt, thighs, and under the chin, are of a yellowiſh white, the back, head, and neck, are in the middle parts black, with

with their borders of a ſort of reddiſh-aſh-colour, with ſome tranſverſe ſpots of white upon the quill-feathers, and the outward ſurface black, ſome of the other wing feathers are tipt with white, ſo that they appear of a fine mixture of black and white, prettily mottled. The tail is about ſix inches long, the colours variegated like thoſe of the body and wings. The legs are long, and of a yellowiſh colour, with ſmall black claws, it has only three fore toes, which are joined together by a little membrane; but has not any back toe at all.

They are found in Norfolk, and ſeveral other counties in England, and have a cry that very much reſembles that of the green plover; they breed very late in the year, inſomuch that the young ones have been found in the latter end of October, ſcarce able to fly; they run very ſwiftly, and will often ſtop, and ſtand without any motion of any part of their bodies.

The *Barker* may not be improperly placed here, from in a great meaſure partaking of the characteriſtics of the curlew family, if it does not in reality belong to it. This bird meaſures from the point of the bill to the end of the tail, near two feet, and from the point of each wing when extended upwards of three. The head and part

of the neck is of a cinereous, or brown colour, interſperſed with ſmall black ſpots; the back, and both the covert and ſcapular feathers of the wings, of a reddiſh brown, with white edges and tips: the quill-feathers black, with their outward edges white. The under part of the body is of a duſky white tinctured with yellow. The tail is compoſed of duſky brown feathers, ſtriped regularly with white on both the webs. The legs and feet are brown, tinctured with a duſky yellow, and greeniſh gloſs.

They generally feed on the ſalt marſhes, not far from the ſea, and are ſo timorous that they will very rarely admit a man to come near them, uſually ſeeking their food in the night as other nocturnal birds do. They are ſaid to make a noiſe like the barking of a dog, from whence they are ſuppoſed to take the name of Barker, though according to Mr. Ray, this appears to be the bird deſcribed by Bellonius by the name of Berge, and that which the French call Petit Corlieu, which they eſteem a very great delicacy.

THE WOODCOCK.

THIS, commonly termed the Snipe genus, is reckoned to include thirty ſpecies, of which the woodcock is conſidered the head. This bird is not quite ſo large as the partridge, being from the point of each wing when extended about two feet, and weighs about eleven, but ſometimes twelve ounces; the bill is ſtraight, and about three inches long, the upper part falling a little over the under at the tip end; the back, and all the under parts of the body partake of a great variety of colours; the back part of the head inclining to black, with little croſs bars that appear like a ſort of ſhell work; and between the eye and the bill, a black line on each ſide; nearer to the bill, it is more reddiſh, the whole beautifully variegated with red, black, grey, and aſh-colour, which viewed together makes a very delightful appearance; the breaſt and belly are more grey, with a variety.

riety of tranſverſe pale and brown lines. The ſides of the wings are croſſed with various red bars, like thoſe on the head, with a few pale or whiter feathers, interſperſed upon each; the under parts of the wings are a mixture of grey and brown, with a variety of croſſed or waved lines. The tail is about three inches long, the upper part of the tips cinereous or brown, the under white, which when it raiſes its tail, as it frequently does while feeding, is often diſcovered by thoſe feathers. The legs and feet are of a duſky pale colour; and the claws, which are very ſmall, black.

They frequent woods, and woody places, where there is rivulets and ſprings; and are very often found on the ſides of banks, near watry ditches, and in ſmall brambles and coverts; where they feed amongſt ſlime and earth, from whence Mr. Willoughby ſays they draw ſmall ſhell fiſh, worms, and other inſects: but Mr. Durham, I think more juſtly obſerves, that they feed chiefly on the fatty unctuous humour they ſuck out of the earth, for which purpoſe he ſays they have remarkable nerves reaching to the end of their bills.

They are birds of paſſage that come into England in the autumn, and leave us in the ſpring,

ſpring, but are ſaid to pair before they go. Notwithſtanding the various conjectures of authors, I believe it is not certainly known from what parts of the world they come, or whither they go; they are generally obſerved to come and go in foggy weather, and ſome of them that by accident have been left here during the ſummer, have been known to breed here, and are ſaid to lay long pale red eggs, deeply ſtained with ſpots and clouds.

The *Godwit* is about ſixteen inches in length, and weighs from ten to twelve ounces; its bill is near as long as that of the woodcock, of a paliſh red towards the baſe, and black at the point, the upper mandible ſomething longer than the lower, the tongue is ſharp, the ears open, and large.

The feathers upon the head are of a light brown or reddiſh colour, with their middle parts black; but about the eyes of a more pale or yellowiſh tincture, the neck and breaſt are pretty much of the ſame colour with the head, only interſperſed with tranſverſed black lines, edged with a yellow pale.

The large wing feathers are black, the ſhafts white, with a broad bar of white running along the middle of the three firſt feathers; the reſt of

of the row, and thoſe alſo of the next have reddiſh aſh-coloured edges and tips; the leſſer covert feathers are of the ſame colour as the body. The tail feathers are alternately croſſed with black and white lines. The legs of a duſky greeniſh colour, and the claws black.

They feed by the ſea-ſide upon ſandy ſhores; where they are frequently ſeen walking up and down like the gull. The throat and neck of the hen are grey, and the rump white, ſpeckled or powdered with blackiſh ſpots. They are in ſome places called the Stone Plover.

The *Green-ſhank* is not ſo common as the godwit; it is about fourteen inches in length; the bill two inches and a half long. The plumage on the upper parts is a brown aſh-colour; on the lower parts white: and it has a broad white ſtroke extending from the bill to the eye: the legs are green, whence it takes its name. It has the ſame manners and character as the godwit, and has alſo a white line over the eye: but does not weigh more than half as much.

The *Red-ſhank* weighs about five ounces and an half, and is twelve inches long. The bill is two inches, red at the baſe, and black towards the point. The head, neck, and ſcapulars are duſky aſh-colour, obſcurely ſpotted with

with black: the back is white, ſpotted with black: the breaſt is white, ſtreaked with duſky lines. When its neſt is in danger, it makes a noiſe ſomewhat ſimilar to that of the lapwing.

The *Snipe* is from the point of the bill to the end of the tail about twelve inches, and from the point of each wing when extended about fifteen or ſixteen, the head is divided by a pale and red line, which runs longways, parallel to which on each ſide is a black line, and over the eyes there runs another line pretty much of the ſame colour of that on the middle of the head; it has a white place under the bill. The feathers that ſpring from the ſhoulders are ſo long that they reach almoſt as far as the end of the tail, the outward half from the ſhaft being of a pale red. The colours thus ſucceeding each other, make two lines down the back, the covert feathers of which are duſky with white tranverſe lines, and white tips on ſome of the large wing feathers, the leſſer feathers being of a mixed colour of red, black and grey, beautifully variegated with white and brown lines; the tail feathers are more red, with black lines running acroſs them. The bill is black at the tip, and near three inches long, the tongue is ſharp, the eyes of a hazel colour. The legs

are of a pale greeniſh colour, the toes pretty long, and the talons black.

The fleſh is exceeding good, ſweet and tender, it feeds on worms and other inſects, and upon the fat unctious humour that it ſucks out of the earth.

They build in moors and marſhes, laying four or five eggs; they generally leave us in the ſummer time, and go into other countries, as other birds of paſſage; but ſome are ſaid to abide all the ſummer in marſhy places, where they likewiſe breed. They feed in drains of water ſprings, and other fenny places.

The *Sandpiper* genus includes at leaſt forty varieties, and among them are the Ruff, the Knot, the Purro, the Turnſtone, the Dunlin, and the Lapwing. The Sandpiper itſelf is a ſmall bird, ſeldom exceeding the ſize of a thruſh, at leaſt in England, and ſome of them are not bigger than a ſparrow. In the milder climates there are larger ſpecies, ſuch as the *green*, the *ſpotted*, the *red*, and the *gambel ſandpipers*, many of which have been ſeen as large as a pigeon. That with whom we are moſt acquainted, weighs about two ounces; it has a brown head ſtreaked with black, the back and coverts brown, mixed with a gloſſy green, and the breaſt

and

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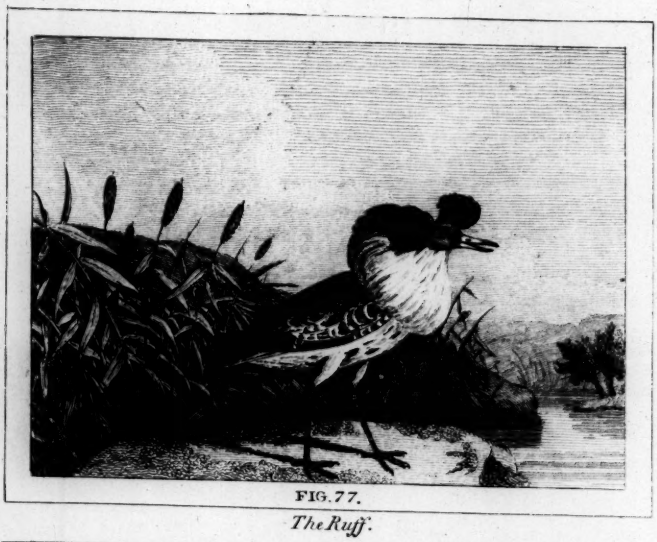

FIG. 77.

The Ruff.

FIG. 78.

Lapwing.

and belly quite white. The whole of this tribe have a ſhrill pipe, or whiſtle, from which they derive their name, and which they conſtantly make uſe of.

The *ruff* is the leaſt known, its race being confined to the north of Europe, during the ſummer, and in England only viſiting certain parts, viz. Lincolnſhire, the Iſle of Ely, and the adjacent parts of Yorkſhire, in the ſpring. The male, which is called the *ruff*, from the remarkable bunch of feathers which ſurrrounds its neck juſt below the head, is ſo various in its plumage, that it is not eaſily deſcribed; the ground is, however moſtly brown. The female, which is called the *reeve* is leſs than the ruff, and has her plumage more of a uniform brown. This bird is ſo noted for its contentious ſpirit, that it has obtained the epithet of the fighter. In the beginning of ſpring, when theſe birds arrive among our marſhes, they are obſerved to engage, with deſperate fury, againſt each other. It is then that the fowlers, ſeeing them intent on mutual deſtruction, ſpread their nets over them, and take them in great numbers; yet, even in captivity, their animoſity ſtill continues. The people that fatten them up for ſale, are obliged to ſhut them up in cloſe

dark rooms; for if they let ever ſo little light in among them, the turbulent priſoners inſtantly fall to fighting each other, and never ceaſe till each has killed his antagoniſt, eſpecially, ſays Willoughby, if any body ſtands by. A ſimilar animoſity, though in a leſs degree, prompts all this tribe; but when they have paired, and begun to lay, their contentions are then over.

The knot is three inches leſs than the ruff, meaſuring not more than nine inches, and weighing only four ounces and an half. The head and neck are aſh-colour, the back and ſcapulars brown, with a white bar on the wings. They frequent the coaſts of Lincolnſhire from Auguſt to November, and when fattened, are preferred by ſome to the ruffs themſelves.

The *Purro*, or *Stint*, weighs only an ounce and an half, and is in length ſeven inches. A white ſtroke divides the bill and eyes. The upper parts of the plumage are browniſh aſh-colour, the breaſt and belly white, as are the lower parts of the quill-feathers. Theſe birds come in vaſt flocks on our ſea-coaſts in winter, and in their flight obſerve uncommon regularity, appearing like a white or duſky cloud.—They were formerly a frequent diſh at our tables and known by the name of ſtints.

The

The *Turnſtone* is about the ſize of a thruſh. The bill is nearly an inch long, and turns a little upwards. The head, throat and belly, are white, the breaſt black, and the neck encircled with a black colour. The upper parts of the plumage are of a pale reddiſh brown. Theſe birds take their name from their method of finding their food, which is by turning up ſmall ſtones with their bills, to get at the inſects which lurk under them.

The *Dunlin* is the ſize of a jack ſnipe. The upper parts of the plumage are ferrugineous, marked with large ſpots of black, and a little white; the lower parts are white, with duſky ſtreaks. It is found in all the northern parts of Europe.

The *Lapwing* is about the ſize of a common pigeon, and is covered very thick with plumes which are black at the roots, but of a different colour on the outward part. The feathers on the belly, thighs, and under the wings are, moſt of them white as ſnow; and the under part on the outſide of the wing is white, but black lower.

It has a great liver divided into two parts; and, as ſome authors affirm, no gall.

They

They make a great noiſe with their wings in flying; and are called pee-wits in the North of England from their particular cry.

They build their neſt on the ground in the middle of ſome heath or field, open and expoſed to view, laying only a few ſtray or bents under the eggs, which are commonly about four or five in number, and ſo like the ground they lie on, in colour, that it is not eaſy to find them, notwithſtanding they lie ſo open; for they are of a dirty yellow, ſpeckled all over with large black ſpots and ſtrokes. The young ones are covered with a thick down, and immediately forſake the neſt as ſoon as hatched; running away with the ſhells upon their back, and following the young ones like chickens.

It is ſaid of this bird, that the further you are from her neſt, the more clamourous ſhe is, and that the nearer you are to it, the leſs concerned ſhe appears, going quietly before you, that ſhe may draw you from the true place, and induce you to believe it is where it is not.

They are found in moſt countries in Europe; and are accounted very delicate eating, the fleſh being tender and well-taſted.

The *Green Plover* is much about the ſame ſize, and has a ſhort, round, black bill, ſharp at

79. FIG. 82.

Plover. *Sea Pie.*

80. FIG. 81.

Water Hen. *Coot.*

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at the end, and a little hooked. The tongue, which fills all the lower chap of the bill, is triangular at the tip, horny underneath, and turns a little up. The feathers of the back and wings are black, thick-ſet with tranſverſe ſpots of a yellowiſh green colour; the breaſt is brown, ſpotted with yellowiſh green; and the belly white. It has no hind claw or ſpur.

They are found in France, Switzerland, Italy, and in moſt countries of England; in all which places they are eſteemed a choice diſh, their fleſh being very tender, and of an exceeding agreeable flavour.

They feed chiefly upon worms; though ſome authors have affirmed they live, like the graſshopper, upon nothing but dew; their inteſtine being almoſt always found empty.

This bird was called Paradalis by the ancients, from its beautiful ſpots, which ſomewhat reſemble thoſe of the leopard.

There are few gentlemen that delight in gardens, but know how neceſſary and uſeful, the lapwing and plover are, for the deſtroying of worms, ſnails, caterpillars, and ſuch other inſects, as generally infeſt thoſe places; and it is very common to leave the care of that part of the gardner's office, to a few of theſe pretty creatures,

creatures, after pulling the large feathers from their wings to prevent their flying abroad.

The *Grey Plover* is about the bigneſs of the former; but the bill is ſomewhat longer and thicker, and it has a very ſmall hind claw or ſpur. The head, back, and leſſer feathers of the wings, are black, with tips of a greeniſh grey. The breaſt, belly, and thighs are white, as are alſo the feathers under the bill; and the throat is ſpotted with brown or duſky ſpots. The tail is very ſhort, inſomuch that the wings exceed it in length.

Their fleſh is very tender and delicate, and no leſs eſteemed than that of the former.

The *Ringed Plover* is ſeven inches and a half long, though it weighs only two ounces; the bill is half an inch long, and from it to the eyes runs a black line. The upper part of the neck is encircled with a white collar, the lower part with a black one. The back and wings are light brown, the breaſt and belly are white, the legs yellow. They frequent our ſhores in ſummer, and are ſometimes known by the name of the ſea lark.

The *Long-legged Plover* is a ſingular bird. Though inferior in ſize to the green plover, it meaſures nearly a foot and a half when ſtanding

ing erect, on which account it has been called the red-legged crane. The head, back, and wings are gloſſy-black, the rump and belly white. It is found in moſt quarters of the world, but is very uncommon in England.

The *Dotterel* is about ten inches in length, and weighs four ounces. The bill is ſhorter than that of any of this genus, being only an inch long. The head is black, ſpotted with white, and a white ſtroke runs under each eye, meeting behind. The upper parts of the plumage are greyiſh brown margined with a dull deep yellow. The breaſt is a dull orange, and acroſs it is a ſtreak of white margined above with black. The colours of the female are leſs vivid. It is eſteemed a very fooliſh bird; and is ſaid to mimic the actions of the fowler, ſtretching out a wing when he ſtretches out an arm, &c. regardleſs of the net which is ſpreading over it. They appear in England in ſmall flocks from April to September.

The *Frigate*, or *Man of War Bird*, is ſo called becauſe of the ſwiftneſs of his flight, and his large and ſpreading wings; he is found in ſeveral of the Caribbee Iſlands, and is ſaid to fly ſometimes a hundred leagues from land, but not often; they are commonly ſeen hovering

about the coaſts of ſome of the above-mentioned iſlands for their prey, which is chiefly the flying fiſh, and are a token by which the ſailors know what part of the world they are in. The body of this bird is about the ſize of a pheaſant, his breaſt very fleſhy, and his tail forked; his wings when ſhut up to his body, are ſo long that they reach down to the end of the tail, like a ſwallow's; the cock is quite black, the hen is of a dirty lead colour, the neck is long, and the head ſmall, with two great black eyes, the ſight very piercing; the claws are ſhort, and divided as the vulture's; the beak is thick, and black, about ſix inches long, the upper part hooking over the under.

This bird ſeems to be a ſpecies of the Alcatraci, only with this difference, the one frequents the Eaſt, and the other the Weſt Indies: he has a great red comb, or rather wattle, hanging under his throat like a cock's, which does not appear in the young till they are full grown; the females have none; there is no difficulty in taking of them when they ſit on the ground, or in their neſt, on account of the length of their wings, which hinders them from riſing haſtily, ſo that they may be beaten down with long ſticks. The oil or fat of this bird is accounted

counted a ſovereign remedy for ſeveral diſorders proceeding from cold, and is in great eſteem all over the Indies. He is a ſea fowl, but his feet are not webbed as the Eaſt India ones are.

A Portugueſe traveller deſcribes a bird he frequently ſaw at Braſil, which they call the caripira, otherwiſe the forked-tail, the tail being divided in the midſt. The fat or oil of this bird he ſays is good againſt a looſeneſs, and the feathers ſerve the Indians for their arrows: and that they are certain fore-runners of the arrival of the ſhips, it very ſeldom failing, that ſome days after they are ſeen, the ſhips arrive in the ports. This, by the deſcription he gives, ſeems to be the bird before deſcribed; but it is the misfortune of a great many travellers not only to miſtake the different ſpecies, by ſome little variations that appear either in colour or ſize of the birds in climates a conſiderable diſtance from each other, but to give us their deſcription in ſuch terms, as are very often difficult to be underſtood.

The *Sea-Lark* is a ſmall bird that does not weigh more than two ounces, whoſe bill is ſhort in compariſon of other water-fowls, the upper part of which is encompaſſed with a black

line, which ſpreads itſelf round the eyes, and paſſes acroſs the middle of the head, where it encircles a fillet or broad bed of white, which runs from the inner corner of one eye to the other; the under part of the throat is white, and round the neck there runs a fine collar, or double ring, the upper part of which is white, the lower part pretty broad and black, the reſt of the body is of a dark aſh-colour, except the breaſt and belly, which are white. The legs and feet are of an orange colour, the claws black, the tail about two inches long.

It builds its neſt of graſs, ſtraw, and ſtalks of plants, upon the ſea rocks where it lays greeniſh-coloured eggs, with brown ſpots upon them. It commonly makes but ſhort flights, but runs exceeding ſwift upon the ſhores, continuing ſinging, and crying as it flies. It is common upon moſt of the ſea coaſts in England, and upon the banks of rivers, and is ſaid to feed upon beetles and ſmall inſects.

The fleſh is ſaid by Ariſtotle, Ælian, Heleodorus, and others to be a certain cure for the jaundice; and ſome authors have not ſcrupled to affirm, that the bare looking upon this bird is a preſent remedy for that diſtemper.

This

This, together with its property of hiding itſelf all day, and only flying abroad in the night, gave riſe to the proverb—*like a ſea-lark*, applied to ſuch perſons as enviouſly concealed any thing, the knowledge of which might be of public uſe or benefit.

The *Water Rail*, or *Ouzle*, weighs about four ounces and a half; it is larger than a quail, and reſembles the water hen; the body is very ſlender, the head is ſmall and narrow, the bill is ſtraight, and about two inches long, reſembling that of the ruff; the lower mandible is red, as is ſome part of the upper, but black and ſmooth towards the top: the tongue is white and rough, and extends itſelf quite to the end of the bill. It has a naked ſkin, with a ſort of bald black ſpot in the forehead, but very ſmall. The upper part of the body is variegated with black, dark brown, and a fine olive colour, the middle part of almoſt every ſingle feather being black, with olive coloured edges. Under the bill upon the throat, it is white, the other part of the neck red, with an aſh-coloured mixture, the outmoſt edges, which appear like fringes of feathers, being more of a greyiſh colour; the breaſt is inclined to a blue, with ſome white feathers about the middle;

dle; on the ſides of the body, and upon the thighs, are black feathers elegantly variegated with white tranſverſe lines. The tail is about two inches long, the upper part of a brown colour, with ſome white feathers on the under part. The legs and feet are ſtrong, and of a reddiſh brown. It hides itſelf about the banks of rivers, and will occaſionally run very ſwift; it ſeems rather to walk than ſwim in the water, and flies with its feet hanging down almoſt ſtraight.

OF THE WATER HEN, AND ITS AFFINITIES.

THIS race is conſidered by naturaliſts as the tribe which unites the web-footed kind with thoſe of the crane ſpecies; for although they have long legs and necks like the latter, yet by being furniſhed with a ſlight membrane between their toes, are enabled to ſwim like the former; the principal of them are the *Gallinule*, or *Water Hen*, and the *Coots*; theſe, though placed in different claſſes by thoſe who are fond of nice diſtinctions, we had almoſt ſaid, perfectly reſemble each other in figure, feathers, and habits; they both have long legs, with thighs almoſt bare of hair or feathers; their necks are rather long in proportion; their wings ſhort, as is their bills, which are very weak; their general colour black, and their forehead bald and without feathers. Such are their

their ſimilarities; and their ſlight differences are firſt in ſize, the water-hen weighing but fifteen ounces, and the coot twenty-four. The bald part of the forehead in the coot is black, in the water-hen it is of a pink colour. The toes of the water-hen are edged with a ſtraight membrane; thoſe of the coot have it ſcolloped and broader. In ſhape and figure their differences are very trifling, and, if poſſible, in their manner of living, ſtill leſs; therefore the hiſtory of one will ſerve for both. As birds of the crane kind are furniſhed with long wings, and eaſily change place, the water-hen, whoſe wings are ſhort, is obliged to reſide entirely near thoſe places where her food lies: ſhe cannot take thoſe long journies that moſt of the crane kind are ſeen to perform; compelled by her natural imperfections, as well perhaps as by inclination, ſhe never leaves the ſide of the pond or the river in which ſhe ſeeks for proviſion. Where the ſtream is ſelvaged with edges, or the pond edged with ſhrubby trees, the water-hen is generally a reſident: ſhe ſeeks her food along the graſſy banks; and often along the ſurface of the water. And it has been judiciouſly remarked by Goldſmith, that "with Shake-"ſpear's Edgar, ſhe drinks the green mantle of

"the

" the ſtanding pool; or, at leaſt, ſeems to pre-
" fer thoſe places where it is ſeen. Whether
" ſhe makes pond-weed her food, or hunts
" among it for water-inſects, which are found
" there in great abundance, is not certain;
" but I have ſeen them when pond-weed was
" taken out of their ſtomach." She builds her neſt upon low trees and ſhrubs, of ſticks and fibres, by the water ſide. Her eggs are ſharp at one end, white, with a tincture of green ſpotted with red. She lays twice or thrice in a ſummer; her young ones ſwim the moment they leave the egg, purſue their parent, and imitate all her manners. She rears, in this manner, two or three broods in a ſeaſon; and when the young are grown up, ſhe drives them off to ſhift for themſelves.

As the coot is a large bird, it is always ſeen in larger ſtreams, and more remote from mankind. The water-hen ſeems to prefer inhabited ſituations: ſhe keeps near ponds, motes, and pools of water near gentlemens' houſes; but the coot keeps in rivers, and among ruſhy margined lakes. It there makes a neſt of ſuch weeds as the ſtream ſupplies, and lays them among the reeds, floating on the ſurface, and riſing and ſailing with the water. The reeds

among which it is built keep it faſt, ſo that it is ſeldom waſhed in the middle of the ſtream. But if this happens, which is ſometimes the caſe, the bird ſits in her neſt, like a mariner in his boat, and ſteers with her legs her cargo into the neareſt harbour; there, having attained her port, ſhe continues to ſit in great tranquillity, regardleſs of the force of the current; and though the water penetrates her neſt, ſhe hatches her eggs in that wet condition.

The water-hen never wanders; but the coot ſometimes ſwims down the current, till it even reaches the ſea. In this voyage theſe birds encounter a thouſand dangers: as they cannot fly far, they are hunted by dogs and men; as they never leave the ſtream, they are attacked and deſtroyed by otters; they are preyed upon by kites and falcons; and they are taken, in ſtill greater numbers, in weirs made for catching fiſh; for theſe birds are led into the nets, while purſuing ſmall fiſh and inſects, which are their principal food; and in this inſtance it has been obſerved, that "animated nature affords a pic-"ture of univerſal invaſion! Man deſtroys the "otter, the otter deſtroys the coot, the coot "feeds upon fiſh, and fiſh are univerſally the "tyrants of each other."

The

The *Olive*, *Sea-pipe*, or *Oyſter Catcher*, is a bird very common on the weſtern ſhores and ſea coaſts of South Wales; it generally weighs about half a pound; its bill is of an orange colour, and about two inches and a half long, ending in a ſharp point, the upper part being a little longer than the under; the eyes and the edges of their lids are of a fine red; the quill-feathers, head, and all the upper parts of the body down to the middle of the breaſt are black; except a creſcent of white which runs along the throat; the belly, rump, and moſt of the covert feathers are white; the lower part of the tail is white; but the tips of the tail feathers are all entirely black; the legs and the feet are of a yellowiſh red, and the middle and outermoſt toes are united by a ſlight kind of membrane. This bird has been called ſea-pie, entirely from living on the ſea ſhores, and its colours being ſo ſuddenly contraſted from black to white; and oyſter-catcher, from the facility with which it takes that fiſh: for this purpoſe, whenever it comes near a parcel of them, it patiently watches round until one opens its ſhells, which is inſtantly perceived by the bird, who with amazing quickneſs thruſts in its beak, and almoſt inſtantaneouſly ſeparates the

oyſter therefrom ; beſides oyſters, it feeds upon limpets, and almoſt all kinds of ſhell fiſh, but notwithſtanding they make the principal part of its food, its fleſh is rank, and very ill flavoured.

Of the *Phalarope* there are three varieties, the common one perfectly reſembles the ſandpiper, except the ſcolloped membranes on the toes ; they are ſmall birds, ſcarcely ever weighing above an ounce. The grey phalarope has the upper parts of the plumage aſh-coloured, varied a little with brown and white, and the breaſt and belly white. The red phalarope only differs from the former, in having the upper parts of the plumage of a deep lead colour, ſtriped with a duſky yellow, and the under parts of a duſky red. They are not a very common bird, but are ſometimes found in the marſhy parts of the country.

To theſe birds, with long legs and finny toes, we will add one ſpecies more, with ſhort legs and finny toes ; namely, the *Grebe*, whoſe appetites and manners it is true, are ſimilar to thoſe of the web-footed claſs, but it reſembles thoſe above deſcribed, in the peculiar form of its toes and bears ſome ſimilitude in its manners alſo.

The

The Grebe is larger than either of the former, and its plumage is white and black; it differs alſo in the ſhortneſs of its legs, which are made for ſwimming, and not walking; in fact, they are from the knee upward hid in the belly of the bird, and have conſequently very little motion. By this mark, and by the ſcolloped fringe of the toes, may this bird be eaſily diſtinguiſhed from all others.

As they are thus, from the ſhortneſs of their wings, ill formed for flying, and from the uncommon ſhortneſs of their legs, utterly unfitted for walking, they ſeldom leave the water, but uſually frequent thoſe broad ſhallow pools where the faculty of ſwimming can be turned to the greateſt advantage, in fiſhing and ſeeking their prey.

They are chiefly, in this country, ſeen to frequent the meres of Shropſhire and Cheſhire; where they breed among reeds and flags, in a floating neſt, kept ſteady by the weeds of the margin. The female is ſaid to be a careful nurſe of its young, being obſerved to feed them moſt aſſiduouſly with ſmall eels; and when the little brood is tired, the mother will carry them, either on her back or under her wings. This bird preys upon fiſh, and is almoſt perpetually diving

diving. It does not ſhew much more than the head above water; it is very difficult to be ſhot, as it darts down on the appearance of the leaſt danger. It is never ſeen on land; and, though diſturbed ever ſo often, will not leave that lake where alone, by diving and ſwimming, it can find food and ſecurity. It is chiefly ſought for the ſkin of the breaſt, the plumage of which is of a moſt beautiful ſilvery white, and as gloſſy as ſatin. This part is made into tippets; but the ſkins are out of ſeaſon about February, loſing their bright colour: and in breeding time their breaſts are entirely bare.

There are a great number of varieties of the grebe enumerated, but the moſt beautiful is the *cared grebe*, which is a native of Siberia; it is about the ſize of a teal, and is diſtinguiſhed by a tuft of orange-coloured feathers, which ſhoot out from the ſide of each eye.

OF THE WEB-FOOTED FOWL IN GENERAL.

IT has been frequently obſerved, that throughout the whole race of birds, one tribe encroached ſo nearly upon the nature and habitudes of another, that it was not eaſy to draw the line which kept them aſunder; but in thoſe which are properly called water-fowl, nature has marked them with a variety of indelible characters.

The firſt great diſtinction in this claſs, appears in the toes, which are webbed together for ſwimming. Thoſe who have remarked the feet or toes of a duck, will eaſily conceive how admirably they are formed for making way in the water. When men ſwim they do not open the fingers, ſo as to let the fluid paſs through them; but cloſing them together preſent one broad ſervice to beat back the water, and

and thus puſh their bodies along. What man performs by art, nature has ſupplied to water-fowl; and, by broad ſkins, has webbed their toes together, ſo that they expand two broad oars to the water; and thus, moving them alternately with the greateſt eaſe paddle along. We muſt obſerve alſo, that the toes are ſo contrived, that as they ſtrike backward, their broadeſt hollow ſurface beats the water; but as they gather them in again, for a ſecond blow, their front ſurface contracts, and does not impede the bird's progreſſive motion.

As their toes are webbed in the moſt convenient manner, ſo are their legs alſo made moſt fitly for ſwift progreſſion in the water. The legs of all are ſhort, except three, namely, the flamingo, the avoſetta, and the corrira.—Except theſe, all web-footed birds have very ſhort legs; and theſe ſtrike, while they ſwim, with great facility. Were the leg long, it would act like a lever whoſe prop is placed to a diſadvantage; its motions would be ſlow, and the labour of moving inconſiderable. For this reaſon, the very few birds whoſe webbed feet are long, never make uſe of them in ſwimming; the web at the bottom ſeems only of ſervice as a broad baſe, to prevent them from ſinking while they

they walk in the mud; but it otherwiſe rather retards than advances their motion.

The ſhortneſs of the legs in the web-footed kinds, render them as unfit for walking on land, as it qualifies them for ſwimming in their natural element. Their ſtay, therefore, upon land, is but ſhort and tranſitory; and they ſeldom venture to breed far from the ſides of thoſe waters where they uſually remain. In their breeding ſeaſons, their young are brought up by the water-ſide; and they are covered with a warm down, to fit them for the coldneſs of their ſituation. The old ones alſo have a cloſer, warmer plumage, than birds of any other claſs. It is of their feathers that our beds are compoſed; as they neither mat nor imbibe humidity, but are furniſhed with an animal-oil, that glazes their ſurface, and keeps each ſeparate. In ſome, however, this animal-oil is in too great abundance; and is as offenſive from its ſmell as it is ſerviceable for the purpoſes of houſehold economy. The feathers, therefore, of all the penguin kind, are totally uſeleſs for domeſtic purpoſes; as neither boiling nor bleaching can diveſt them of their oily rancidity. Indeed, the rancidity of all new feathers, of whatever water fowl they be, is ſo diſguſting that

our upholſterers give near double the price for old feathers that they afford for new: to be free from ſmell, they muſt all be lain upon for ſome time; and their uſual method is to mix the new and the old together.

The quantity of oil, with which moſt water fowl are ſupplied, contributes alſo to their warmth in the moiſt element where they reſide. Their ſkin is generally lined with fat; ſo that, with the warmth of the feathers externally, and this natural lining more internally, they are better defended againſt the changes or the inclemencies of the weather, than any other claſs whatever.

As, among land-birds, there are ſome found fitted entirely for depredation, and others for an harmleſs method of ſubſiſting upon vegetables, ſo alſo among theſe birds there are tribes of plunderers, that prey, not only upon fiſh, but ſometimes upon water-fowls themſelves. There are likewiſe more inoffenſive tribes that live upon inſects and vegetables only. Some water-fowls ſubſiſt by making ſudden ſtoops from above, to ſeize whatever fiſh come near the ſurface; others again, not furniſhed with wings long enough to fit them for flight, take their prey by diving after it to the bottom.

From

From hence all naturaliſts obſerve, that all "water-fowl naturally fall into three diſtinc-"tions. Thoſe of the Gull kind, that, with "long legs and round bills, fly along the ſur-"face to ſeize their prey. Thoſe of the pen-"guin kind, that with round bills, legs, hid "in the abdomen, and ſhort wings, dive after "their prey: and thirdly, thoſe of the Gooſe "kind, with flat broad bills, that lead harm-"leſs lives, and chiefly ſubſiſt upon inſects and "vegetables.

Theſe diſtinctions are ſtrongly and evidently marked by Nature. The gull kind are active and rapacious; conſtantly, except when they breed, keeping upon the wing; fitted for a life of rapine, with ſharp ſtraight bills for piercing, or hooked at the end for holding their fiſhy prey. In this claſs we may rank the albatroſs, the cormorant, the gannet or ſoland gooſe, the ſhag, the great brown gull, and all the leſſer tribe of gulls.

The Penguin kind, with appetites as voracious, bills as ſharp, and equally eager for prey, are yet unqualified to obtain it by flight. Their wings are ſhort, and their bodies large and heavy, ſo that they can neither run nor fly. But they are formed for diving in a very

peculiar manner. Their feet are placed ſo far backward, and their legs ſo hid in the abdomen, that the ſlighteſt ſtroke ſends them head fore-moſt to the bottom of the water. To this claſs we may refer the penguin, the auk, the ſkout, the ſea-turtle, the bottle-noſe, and the loon.

The Gooſe kind are diſtinguiſhable by their flat broad bills, covered with a ſkin; and their manner of feeding, which is moſtly upon vegetables. In this claſs we may place the ſwan, the gooſe, the duck, the teal, the widgeon, and all their numerous varieties.

Such are the general peculiarities that belong to each of theſe tribes, of which, as well as of their diſtinctive ones, we ſhall have occaſion to ſpeak of more fully when we come to treat of them individually.

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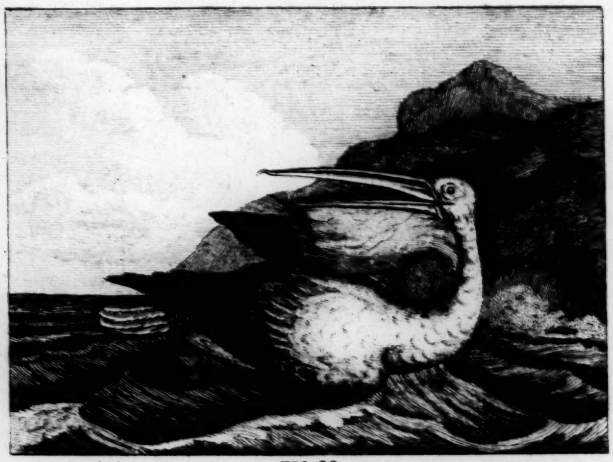

FIG. 83.

The Pelican.

FIG. 84.

Albatross.

OF THE PELICAN.

AS this bird has not only to boaſt a pre-eminence in ſize, but poſſeſſes a ſingularity of conformation peculiar to itſelf, it neceſſarily has a claim to take the lead in that ſpecies to which it ſeems to be moſt nearly allied, although it cannot be ſaid to abſolutely belong thereto.

The Pelican of Africa is much larger in the body than a ſwan, and ſomewhat of the ſame ſhape and colour. Its four toes are all webbed together; and its neck in ſome meaſure reſembles that of a ſwan: but the ſingularity in which it differs from all other birds is in the bill and the great pouch underneath, which are wonderful, and demand a diſtinct deſcription. This enormous bill is fifteen inches from the point to the opening of the mouth, which is a good way behind the eyes. At the baſe

baſe the bill is ſomewhat greeniſh, but varies towards the end, being of a reddiſh blue. It is ſomewhat thick in the beginning, but tapers off to the end, where it hooks downwards. The under chap is ſtill more extraordinary, for to the lower edges of it hang a bag, reaching the whole length of the bill to the neck, which is ſaid to be capable, in ſome, of containing fifteen quarts of water. This bag the bird has a power of wrinkling up into the hollow of the under chap; but by opening the bill, and putting one's hand down into the bag, it may be diſtended at pleaſure. The ſkin of which it is formed will then be ſeen of a bluiſh aſh-colour, with many fibres and veins running over its ſurface. It is not covered with feathers, but with a ſhort downy ſubſtance as ſmooth and as ſoft as ſatin, and is attached all along the under edges of the chap, to be fixed backward to the neck of the bird by proper ligaments, and reaches near half way down. When this bag is empty it is not ſeen; but when the bird has fiſhed with ſucceſs, it is then incredible to what an extent it is often dilated. For the firſt thing the pelican does in fiſhing is to fill up the bag; and then it returns to digeſt its burthen at leiſure. When the bill

is

is opened to its wideſt extent, a perſon may run his head into the bird's mouth, and conceal it in this monſtrous pouch, thus adapted for very ſingular purpoſes. Yet this is nothing to what Ruyſch aſſures us, who avers, that a man has been ſeen to hide his whole leg, boot and all, in the monſtrous jaw of one of theſe animals. At firſt appearance this would ſeem impoſſible, as the ſides of the under chap, from which the bag depends, are not above an inch aſunder when the bird's bill is firſt opened; but then they are capable of great ſeparation; and it muſt neceſſarily be ſo as the bird preys upon the largeſt fiſh, and hides them by dozens in its pouch. Father Tertre affirms that it will hide as many fiſh as will ſerve ſixty hungry men for a meal.

This extraordinary bird is a native of Africa and America. It was once known in Europe, particularly in Ruſſia, but it ſeems of late to have deſerted theſe parts entirely. This is the bird of which ſo many fabulous accounts have been propagated; ſuch as its feeding its young with its own blood, and its carrying a proviſion of water for them in its great reſervoir when it has made its neſt in the deſart. The abſurdity of the firſt account anſwers for itſelf; and

as

as for the latter, according to the account of every naturaliſt who has obſerved them, the pelican uſes its bag for very different purpoſes than that of filling it with water, either for its own uſe or that of its progeny.

Its amaxing pouch may be conſidered as analogous to the crop in other birds, with this difference, that as the latter lies at the bottom of the gullet, ſo this is placed at the top. Thus, as pigeons and other birds macerate their food for their young in their crops, and then ſupply them, ſo the pelican ſupplies its young by a more ready contrivance, and macerates their food in its bill, or ſtores it for its own particular ſuſtenance.

The ancients were particularly fond of the marvellous, and almoſt unanimouſly agreed in giving this bird admirable qualities and parental affections; ſtruck, perhaps, with this extraordinary figure, they were willing to ſupply it with as extraordinary appetites; and having found it with a large reſervoir, they were pleaſed with turning it to the moſt tender and parental uſes. But we have the authority of the great Buffon for aſſerting that the pelican is a very ſluggiſh, voracious bird, and very ill fitted to take thoſe flights, or make thoſe cautious

tious proviſions for a diſtant time, which the ancients were ſo partial of attributing to them. Father Labat, who ſeems to have ſtudied their manners with great exactneſs, has given a minute hiſtory of this bird, as found in America.

"The pelican," ſays he, "has ſtrong wings, "furniſhed with thick plumage of an aſh colour, "as are the reſt of the feathers over the whole "body. Its eyes are very ſmall, when com- "pared to the ſize of its head, ; there is a ſad- "neſs in its countenance, and its whole air is "melancholy. It is as dull and reluctant in its "motions, as the flamingo is ſprightly and ac- "tive. It is ſlow of flight; and when it riſes "to fly, performs it with difficulty and labour. "Nothing, as it would ſeem, but the ſpur of "neceſſity, could make theſe birds change their "ſituation, or induce them to aſcend into the "air: but they muſt either ſtarve or fly.

"They are idle and inactive to the laſt de- "gree, ſo that nothing can exceed their indo- "lence but their gluttony; it is only from ſti- "mulations of hunger that they excited to "labour; for otherwiſe they would continue "always in fixed repoſe. When they have "raiſed themſelves about thirty or forty feet "above the ſurface of the ſea, they turn their

" head with one eye downwards, and continue " to fly in that poſture. As ſoon as they per- " ceive a fiſh ſufficiently near the ſurface, they " dart down upon it with the ſwiftneſs of an " arrow, ſeize it with unerring certainty, and " ſtore it up in their pouch. They then riſe " again, though not without great labour, and " continue hovering and fiſhing, with their " head on one ſide as before.

" This work they continue with great ef- " fort and induſtry till their bag is full, and then " fly to land to devour and digeſt at leiſure the " fruits of their induſtry. This, however, it " would appear they are not long in perform- " ing; for towards night they have another " hungry call; and they again reluctantly go to " labour. At night, when their fiſhing is " over, and the toil of the day crowned with " ſucceſs, theſe lazy birds retire a little way " from the ſhore; and though with the webbed " feet and clumſy figure of a gooſe, they will " be contented to perch no where but upon " trees among the light and airy tenants of the " foreſt. There they take their repoſe for the " night; and often ſpend a great part of the day, " except ſuch times as they are fiſhing, ſitting " in diſmal ſolemnity, and as it would ſeem

" half

" half-aſleep. Their attitude is with the head " reſting upon their great bag, and that reſting " upon their breaſt. There they remain with- " out motion, or once changing their ſituation, " till the calls of hunger break their repoſe, and " till they find it indiſpenſibly neceſſary to fill " their magazine for a freſh meal. Thus their " life is ſpent between ſleeping and eating; and " being as foul as they are voracious, they are " every moment voiding excrements in heaps " as large as one's fiſt."

" The ſame indolent habits, ſays another " author, ſeem to attend them even in prepar- " ing for incubation, and defending their young " when excluded. The female makes no pre- " paration for her neſt, nor ſeems to chuſe any " place in preference to lay in; but drops her " eggs on the bare ground to the number of " five or ſix, and there continues to hatch them. " Attached to the place, without any deſire of " defending her eggs or her young, ſhe tamely " ſits and ſuffers them to be taken from under " her. Now and then ſhe juſt ventures to " peck, or to cry out when a perſon offers to " beat her off."

She feeds her young with fiſh macerated for ſome time in her bag, and when they cry, flies off for a new ſupply. Labat tells us, that he

took two of theſe when very young, and tied them by the leg to a poſt ſtuck in the ground, where he had the pleaſure of ſeeing the old one for ſeveral days come to feed them, remaining with them the greateſt part of the day, and ſpending the night on the branch of a tree that hung over them. By theſe means they were all three become ſo familiar, that they ſuffered themſelves to be handled; and the young ones very kindly accepted whatever fiſh he offered them. Theſe they always put firſt into their bag, and then ſwallowed at their leiſure.

It ſeems, however, that they are but diſagreeable and uſeleſs domeſtics; their gluttony can ſcarcely be ſatisfied; their fleſh ſmells very rancid; and taſtes a thouſand times worſe than it ſmells. The native Americans kill vaſt numbers; not to eat, for they are not fit even for the banquet of a ſavage; but to convert their large bags into purſes and tobacco-pouches.—They beſtow no ſmall pains in dreſſing the ſkin with ſalt and aſhes, rubbing it well with oil, and then forming it to their purpoſe. It thus becomes ſo ſoft and pliant, that the Spaniſh women ſometimes adorn it with gold and embroidery to make work-bags of.

Yet, with all the ſeeming ſtupidity of this bird, it is not entirely incapable of inſtruction in

in a domeſtic ſtate. Father Raymond ſays, that he has ſeen one ſo tame and well educated among the Native Americans, that it would go off in the morning at the word of command, and return before night to its maſter, with its great paunch diſtended with plunder; a part of which the ſavages would make it diſgorge, and a part they would permit it to reſerve for itſelf.

"The Pelican," as Faber relates, "is not "deſtitute of other qualifications. One of "thoſe which was brought alive to the Duke "of Bavaria's court, where it lived forty years, "ſeemed to be poſſeſſed of very uncommon "ſenſations. It was much delighted in the "company and converſation of men, and in "muſic both vocal and inſtrumental: for it "would willingly ſtand by thoſe that ſung or "ſounded the trumpet; and ſtretching out its "head, and turning its ear to the muſic, liſten "very attentively to its harmony, though its "own voice was little pleaſanter than the "braying of an aſs." Geſner tells us the emperor Maximilian had a tame pelican which lived for above eighty years, and which always attended his army on their march. It was one of the largeſt of the kind, and had a daily allowence by the emperor's orders. As another

another proof of the great age to which the pelican lives, Aldrovandus makes mention of one of theſe birds that was kept ſeveral years at Mechlin, and was verily believed to be fifty years old. If we were to follow a not unfrequent practice of drawing concluſions from colours alone, we ſhould be led to make the aſſertion that of the pelican ſpecies there were many varieties, ſince there are ſome entirely white, others whoſe back and wings are a light brown, and others, though the moſt ſingular, are not the leaſt numerous, which have one half their wing feathers white, and the other black, that is, the bottoms next the body white, and the exterior half black, and whoſe tails are alſo of the latter colour. Beſides theſe, it is aſſerted by Father Morella in his voyage to Congo, that in the road to Singa, he met with a great number of pelicans all over black, except their breaſts, which, nature has adorned with a fleſh colour. They are very numerous in all parts of Aſia and Africa, and Thevenot aſſures us that he ſaw them ſwimming on the banks of ſome parts of the Nile, near the red-ſea, like geeſe, in ſuch numbers that it was impoſſible to count them.

THE ALBATROSS.

THIS is one of the largeſt and moſt formidable birds of Africa and America, but as yet few opportunities have occurred whereby the particulars of its natural hiſtory could be obtained, and therefore that little which has been mentioned muſt be ſubject to ſome doubt. In ſpeaking of its figure, Edwards appears to have been the moſt correct, he ſays, "the body is "rather larger than that of the pelican; and "its wings, when extended, ten feet from tip "to tip. The bill, which is ſix inches long, "is yelloviſh, and terminates in a crooked "point. The top of the head is of a bright "brown; the back is of a dirty deep ſpotted "brown; and the belly and under the wings "is white: the toes, which are webbed, are "of a fleſh colour."

Such

Such are the principal traits which he points out in this bird's figure; but of any peculiarities in its manners and diſpoſition, which might lead us to ſome knowledge of its hiſtory, the greateſt part of our naturaliſts have been entirely ſilent. A bird has however been deſcribed by Wicquefort, under the title of the Alcatraz, which, from its ſize, colours, and choice of its prey, leaves no room to doubt of its being the ſame we have under conſideration. He deſcribes it as a kind of great gull, as large in the body as a gooſe, of a brown colour, with a long bill, and living upon fiſh, of which they kill great numbers.

The Albatroſs is an inhabitant of the tropical climates, and alſo beyond them as far as the Straits of Magellan in the South Seas. It is one of the moſt fierce and formidable of the aquatic tribe, not only living upon fiſh, but alſo ſuch ſmall water-fowl as it can take by ſurpriſe. It may be conſidered as the principal of the gull kind; like the whole of them ſeeks its prey upon the wing; and chiefly purſues the flying fiſh, that are forced from the ſea by the dolphins. The ocean in that part of the world preſents a very different appearance from the ſeas with which we are ſurrounded. In our

ſeas

ſeas we ſee nothing but a dreary expanſe, ruffled by winds, and ſeemingly forſaken by every claſs of animated nature. But the tropical ſeas, and the diſtant ſouthern latitudes beyond them, are all alive with birds and fiſhes, purſuing and purſued. Every various ſpecies of the gull kind are there ſeen hovering on the wing, at an immenſe diſtance from the ſhore. A picture of which has been thus moſt ably drawn:—"the flying fiſh are every moment "riſing to eſcape from their purſuers of the "deep, only to encounter equal dangers in the "air. Juſt as they riſe the dolphin is ſeen to "dart after them, but generally in vain; the "gull has more frequent ſucceſs, and often "takes them at their riſe; while the albatroſs "purſues the gull, and obliges it to relinquiſh "its prey: ſo that the whole horizon preſents "but one living picture of rapacity and invaſion."

Theſe facts have been too clearly aſcertained to leave the ſmalleſt kind of doubt; but how far we are to credit Wicquefort, in what he adds concerning this bird, the reader is left to determine; he remarks that "as theſe birds, "except when they breed, live entirely remote "from land, ſo they are often ſeen, as it ſhould

" ſeem, ſleeping in the air. At night, when " they are preſſed by ſlumber, they riſe into " the clouds as high as they can; there put- " ting their head under one wing, they beat " the air with the other, and ſeem to take their " eaſe. After a time, however, the weight " of their bodies, only thus half ſupported, " brings them down; and they are ſeen de- " ſcending with a pretty rapid motion, to the " ſurface of the ſea. Upon this they again " put forth their efforts to riſe; and thus al- " ternately aſcend and deſcend at their eaſe. " But it ſometimes happens, that, in theſe " ſlumbering ſlights, they are off their guard, " and fall upon deck when they are taken."

What truth there may be in this account of that author we ſhall not pretend to determine; but certain it is, that few birds float upon the air with more eaſe than the albatroſs, or ſupport themſelves a longer time in that element. They ſeem never to feel the acceſſes of fatigue; but night and day upon the wing are always prowling, yet always emaciated and hungry.

Though this bird is of the moſt voracious diſpoſition, and thus tyrannical in its nature, yet he is alſo a proof that there are ſome aſſociates which even tyrants themſelves form, to which

which they are induced either by caprice or neceſſity. The albatroſs ſeems to have a peculiar affection for the penguin, and a pleaſure in its ſociety. They are always ſeen to chuſe the ſame places of breeding; ſome diſtant uninhabited iſland, where the ground ſlants to the ſea, as the penguin is not formed either for flying or climbing. In ſuch places their neſts are ſeen together, as if they ſtood in need of mutual aſſiſtance and protection. Captain Hunt, who for ſome time commanded at our ſettlement upon Falkland Iſlands, has declared that he was often amazed at the union preſerved between theſe birds, and the regularity with which they built together. In that bleak and deſolate ſpot, where the birds had long continued undiſturbed poſſeſſors, and no way dreaded the encroachments of men, they ſeemed to make their abode as comfortable as they expected it to be laſting. They were ſeen to build with an amazing degree of uniformity; their neſts, by thouſands, covering fields, and reſembling a regular plantation. In the middle, on high, the albatroſs raiſed its neſt, on heath ſticks and long graſs, about two feet above the ſurface: round this the penguins made their lower ſettlements, rather in holes in the ground; and moſt uſually

eight penguins to one albatroſs. Nothing is a ſtronger proof of M. Buffon's fine obſervation, that the preſence of man not only deſtroys the ſociety of meaner animals, but their inſtincts alſo; for we have it as a poſitive fact, that theſe neſts are now totally deſtroyed; the ſociety is broke up, and the albatroſs and penguin have gone to breed upon more deſert ſhores, where they conceive themſelves ſafe from his intruſion, and where they can ſecurely preſerve that peace and ſafety, which he is conſtantly ſure to interrupt.

THE CORMORANT.

THE Cormorant is commonly deſcribed as being about the ſize of a large Muſcovy duck, and to be diſtinguiſhed from all other birds of this kind, by its four toes being united together by membranes; and by the middle toe being toothed or notched, like a ſaw, to aſſiſt it in holding its fiſhy prey. The head and neck of this bird are of a browniſh black; and the body thick and heavy, more inclining in figure to that of the gooſe than the gull. The bill is ſtraight, till near the end, where the upper chap bends into a hook; the tail is about five inches long, compoſed of hard ſtiff feathers, and the legs are ſtrong and thick, but very ſhort.

But notwithſtanding the ſeeming heavineſs of its make, there are few birds can exceed it in power of wing, or ſtrength of flight. As ſoon as the winter approaches they are ſeen diſperſed

diſperſed along the ſea-ſhore, and aſcending up the mouths of freſh-water rivers, carrying deſtruction to all the finny tribe. They are moſt remarkably voracious, and have a moſt ſudden digeſtion. Their appetite is for ever craving, and never ſatisfied. This gnawing ſenſation may probably be encreaſed by the great quantity of ſmall worms that fill their inteſtines, and which their unceaſing gluttony contributes to engender.

Thus formed with the groſſeſt appetites, this unclean bird has the moſt rank and diſagreeable ſmell, and is more fœtid than even carrion in its moſt healthful ſtate. "Its form," ſays the ingenious Mr. Pennant, "is diſagreeable; its "voice is hoarſe and croaking; and all its "qualities obſcene. No wonder then that "Milton ſhould make Satan perſonate this "bird, when he ſent him upon the baſeſt pur-"poſes, to ſurvey with pain the beauties of "Paradiſe, and to ſit deviſing death on the "tree of life. It has been remarked, how-"ever, of our poet, that the making a water-"fowl perch on a tree, implied no great ac-"quaintance with the hiſtory of Nature. In "vindication of Milton, Ariſtotle expreſsly "ſays, that the cormorant is the only water-

"fowl

" fowl that ſits on trees. We have already " ſeen the pelican of this number; and the " cormorant's toes ſeem as fit for perching " upon trees as for ſwimming; ſo that our epic " bard ſeems to have been as deeply verſed in " natural hiſtory as in criticiſm."

" Indeed," ſays a modern writer, " this bird " ſeems to be of a multiform nature; and " wherever fiſh are to be found, watches their " migrations. It is ſeen as well by land as " ſea; it fiſhes in freſh-water lakes as well " as in the depths of the ocean; it builds in " the cliffs of rocks, as well as on trees; " and preys not only in the day time, but by " night."

Its indefatigable nature, and its great power in catching fiſh, were probably the motives that induced ſome nations to breed this bird up tame, for the purpoſe of fiſhing; and Willoughby aſſures us, it was once uſed in England for that purpoſe. The deſcription of their manner of fiſhing is thus delivered by Faber. " When they carry them out of the rooms " where they are kept, to the fiſh-pools, they " hood-wink them, that they may not be " frightened by the way. When they are come " to the rivers, they take off their hoods; and

" having

" having tied a leather thong round the lower " part of their necks, that they may not ſwal- " low down the fiſh they catch, they throw " them into the river. They preſently dive " under water; and there for a long time " with wonderful ſwiftneſs, purſue the fiſh; " and when they have caught them, riſe to the " top of the water, and preſſing the fiſh lightly " with their bills, ſwallow them; till each bird " hath, after this manner, devoured five or ſix " fiſhes. Then their keepers call them to the " ſide, to which they readily fly; and, one after " another, vomit up all their fiſh, a little bruiſ- " ed with the firſt nip given in catching them. " When they have done fiſhing, ſetting the " birds on ſome high place, they looſe the " ſtring from their necks, leaving the paſſage " to the ſtomach free and open; and, for their " reward, they throw them part of their prey; " to each one or two fiſhes, which they will " catch moſt dexterouſly, as they are falling in " the air."

At preſent, the cormorant is trained up in every part of China for the ſame purpoſe, where there are many lakes and canals. " To this " end," ſays Le Comte, " they are educated as " men rear up ſpaniels or hawks, and one man

" can

" can eaſily manage an hundred. The fiſher
" carries them out into the lake, perched on the
" gunnel of his boat, where they continue tran-
" quil, and expecting his orders with patience.
" When arrived at the proper place, at the firſt
" ſignal given, each flies a different way to
" fulfil the taſk aſſigned it. It is very pleaſant
" on this occaſion, to behold with what ſaga-
" city they portion out the lake or the canal
" where they are upon duty. They hunt about,
" they plunge, they riſe an hundred times to
" the ſurface, until they have at laſt found their
" prey. They then ſeize it with their beak by
" the middle, and carry it without fail to their
" maſter. When the fiſh is too large, they
" then give each other mutual aſſiſtance: one
" ſeizes it by the head, the other by the tail,
" and in this manner carry it to the boat toge-
" ther. There the boatman ſtretches out one
" of his long oars, on which they perch, and
" being delivered of their burthen, they fly off
" to purſue their ſport. When they are wea-
" ried, he lets them reſt for a while; but they
" are never fed till their work is over. In this
" manner they ſupply a very plentiful table;
" but ſtill their natural gluttony cannot be re-

" claimed even by education. They have al-
" ways, while they fiſh, the ſame ſtring faſten-
" ed round their throats, to prevent them from
" devouring their prey, as otherwiſe they would
" at once ſatiate themſelves, and diſcontinue
" the purſuit the moment they had filled their
" bellies."

The cormorant is the beſt fiſher of all birds; and though fat and heavy with the quantity it devours, is nevertheleſs generally upon the wing. The great activity with which it purſues, and from a vaſt height drops down to dive after its prey, offers one of the moſt amuſing ſpectacles to thoſe who ſtand on the ſhore. —This large bird is ſeldom ſeen in the air, but where there are fiſh below; and then they muſt be near the ſurface, before it will venture to ſouſe upon them. If they are at a depth beyond what the impetus of its flight makes the cormorant capable of diving to, they certainly eſcape him; for this bird cannot move ſo faſt under water, as the fiſh can ſwim. It ſeldom, however, makes an unſucceſsful dip; and is often ſeen riſing heavily, with a fiſh larger than it can readily devour. Goldſmith ſays,

" it

" it ſometimes happens, that the cormorant " has caught the fiſh by the tail; and conſe- " quently the fins prevent its being eaſily " ſwallowed in that poſition. In this caſe, " the bird is ſeen to toſs its prey above its " head, and very dexterouſly to catch it when " deſcending, by the proper end, and ſo ſwal- " low it with eaſe."

The ambaſſador from the Duke of Holſtein, in his travels into Muſcovy and Perſia, ſpeaks of a kind of large wild geeſe, or cormorants, which they met with, and which the Muſcovites call *babbes*. This author deſcribes them as being larger than ſwans; and that their bills were above a foot long, two fingers broad, and forked at the end; under the bill he ſays, they had a bag of ſkin, which they could contract quite cloſe, or extend it to ſuch a ſize as to contain more than two gallons of liquor; and this they uſed as a reſervatory for the fiſh they take, until they can ſwallow them; he ſays that one of them that was ſhot upon the Caſpean ſea, meaſured two ells and a half between the two extremities of the wings, and ſeven feet from the head to the end of the toes. In this meaſurement, we may poſſibly not unfairly conclude

that ſome little allowances muſt be made at his being ſtruck with aſtoniſhment at the animal himſelf, and wiſhing to convey the ſame aſtoniſhment to others. Fernandes ſays there are cormorants in Mexico, which have teeth within their bills.

The *Shag*, or, as the French call it, the *leſſer Cormorant*, is another of this genus. The common ſhag is in length two feet ſix inches, and the extent of its wings eight feet. The general colour of its plumage is black, the belly is duſky, and the head and neck gloſſed with green. The creſted ſhag is ſomewhat leſs than the preceding, and is leſs common. There are two kinds which are natives of Kamtſcatka; theſe are diſtinguiſhed as the violet and the red-faced ſhags, being ſo ornamented with thoſe colours. Beſides there are ſeveral others found in New Zealand, and alſo in Africa, in the latter of which there are two ſpecies not larger than a teal. The whole of theſe like the cormorants build in trees.

THE GANNET, OR SOLAND GOOSE.

THE Gannet is about the ſize of a tame gooſe, but its wings are much longer, frequently meaſuring ſix feet when extended. The bill is ſix inches long, ſtraight almoſt to the point, where it inclines down, and the ſides are irregularly jagged, that it may hold its prey with greater ſecurity. It differs from the cormorant in ſize, being larger; and its colour, which is chiefly white; and by its having no noſtrils, but in their place a long furrow that reaches almoſt to the end of the bill. From the corner of the mouth is a narrow ſlip of black bare ſkin, that extends to the hind part of the head; beneath the ſkin is another that, like the pouch of the pelican, is dilatable, and of ſize ſufficient to contain five or ſix entire herrings, which in the breeding ſeaſon it carries at once to its mate or its young.

Theſe

Theſe birds, which ſubſiſt entirely upon fiſh, chiefly reſort to thoſe uninhabited iſlands where their food is found in plenty, and men ſeldom come to diſturb them. The iſlands to the north of Scotland, the Skelig iſlands of the coaſts of Kerry, in Ireland, and thoſe that lie in the north ſea off Norway, abound with them. But it is on the Baſs iſland, in the Firth of Edinburgh, where they are ſeen in the greateſt abundance. "There is a ſmall iſland," ſays the celebrated Harvey, "called the Baſs, not "more than a mile in circumference. The "ſurface is almoſt wholly covered during the "months of May and June with their neſts. "their eggs, and young. It is ſcarcely poſ- "ſible to walk without treading on them; the "flocks of birds upon the wing are ſo nume- "rous, as to darken the air like a cloud; and "their noiſe is ſuch, that one cannot, without "difficulty, be heard by the perſon next to "him. When one looks down upon the ſea "from the precipice, its whole ſurface ſeems "covered with infinite numbers of birds "of different kinds, ſwimming and purſu- "ing their prey. If, in ſailing round the iſ- "land, one ſurveys its hanging cliffs, in every "crag or fiſſure of the broken rocks, may

"be

" be ſeen innumerable birds, of various ſorts, " and ſizes, more than the ſtars of heaven, " when viewed in a ſerene night. If they are " viewed at a diſtance, either receding, or in " their approach to the iſland, they ſeem like " one vaſt ſwarm of bees."

They are not leſs frequent upon the rocks of St. Kilda. Martin aſſures us, that the inhabitants of that ſmall iſland conſume annually near twenty-three thouſand young birds of this ſpecies, beſides an amazing quantity of their eggs. On theſe they principally ſubſiſt throughout the year; and from the number of theſe viſitants, make an eſtimate of their plenty for the ſeaſon. They preſerve both the eggs and fowls in ſmall pyramidal ſtone buildings, covering them with turf-aſhes, to prevent the evaporation of their moiſture.

The gannet is a bird of paſſage. In winter it ſeeks the more ſouthern coaſts of Cornwall, hovering over the ſhoals of herrings and pilchards that then come down from the northern ſea: its firſt appearance in the northern iſlands is in the beginning of ſpring; and it continues to breed till the end of ſummer. But, in general, its motions are determined by the migrations of the immenſe ſhoal of herrings that come

pouring

pouring down at that ſeaſon through the Britiſh Channel, and ſupply all Europe as well as this bird with their ſpoil. The gannet aſſiduouſly attends the ſhoal in their paſſage, keeps with them in their whole circuit round our iſland, and ſhares with our fiſhermen this exhauſtleſs banquet. As it is ſtrong of wing, it never comes near the land, but is conſtant to its prey. Wherever the gannet is ſeen, it is ſure to announce to the fiſhermen the arrival of the finny tribe; they then prepare their nets, and take the herrings by millions at a draught; while the gannet, who came to give the firſt information, comes, though an unbidden gueſt, and ſnatches its prey from the fiſherman even in his boat. While the fiſhing ſeaſon continues, the gannets are buſily employed; but when the pilchards diſappear from our coaſts, the gannet takes its leave to keep them company.

The cormorant has been remarked for the quickneſs of his ſight; yet in this the gannet ſeems to exceed him. It is poſſeſſed of a tranſparent membrane under the eye-lid, with which it covers the whole eye at pleaſure, without obſcuring the ſight in the ſmalleſt degree. This ſeems a neceſſary proviſion for the ſecurity of the eyes of ſo weighty a creature, whoſe method

thod of taking prey, like that of the cormorant, is by darting headlong down from an height of an hundred feet and more into the water to ſeize it. Theſe birds are ſometimes taken at ſea, by faſtening a pilchard to a board, which they leave floating. The gannet inſtantly bounces down from above upon the board, and is killed or maimed by the ſhock of a body where it expected no reſiſtance.

Theſe birds breed but once a year, and lay only one egg, but if that is taken away, they lay another; and if that be alſo taken away, then a third; but never more for that ſeaſon. Their eggs are white, and rather leſs than thoſe of the common gooſe; and their neſt large, compoſed of ſuch ſubſtances as are found floating on the ſurface of the ſea. The young birds, during the firſt year, differ greatly in colour from the old ones; being of a duſky hue, ſpeckled with numerous triangular white ſpots; and at that time reſembling the colours of the ſpeckled diver.

They come yearly to the Baſs Iſland, which is an almoſt inacceſſible rock, ſituated at the mouth of the Forth in Scotland, ſeven miles from land, and faces St. Andrews on the North, North Berwick on the South, and

the German ocean on the Eaſt. It was anciently a kind of priſon for thoſe who diſſented from the then eſtabliſhed church. There they breed in great numbers; it belongs to one proprietor, and care is taken never to frighten away the birds when laying, or to ſhoot them upon the wing. By that means they become ſo confident as to alight and feed their young ones unconcerned at any perſon's being near them. The feed upon fiſh, as we have obſerved; yet the young gannet is counted a great dainty by the Scots, and ſold very dear; ſo that the lord of the above iſlet makes a conſiderable annual profit by the quantity that is taken therefrom.

They quit this iſland towards the latter end of autumn, and when they return in the ſpring there is uſually but three or four at firſt, which precede the reſt as ſo many ſpies, or harbingers, and are followed by the flock a few days after, as is atteſted by ſeveral creditable authors. They build their neſts in the rock, and employ for that purpoſe ſuch a quantity of ſticks as is almoſt incredible; inſomuch that the inhabitants of that part of the country, upon finding a few neſts, think themſelves plentifully provided with fuel for a twelvemonth. They depoſit their

their eggs in the holes of the rock, and while they are laying them, reſt one foot upon another; whence Johnſton thinks they derive their name from Solea, the ſole of the foot. They feed their young ones with the moſt delicate ſort of fiſh; and if in flying away with one, they ſee another they like better, they immediately drop the firſt, and plunge into the water again with great violence. They likewiſe diſgorge a great quantity of fiſh, which were formerly uſed as food by the garriſon of the caſtle.

OF GULLS, AND THEIR AFFINITIES.

THESE are in fact but a ſmaller kind of that genus we have juſt been deſcribing, and whoſe habits and manners exactly correſpond; they alſo reſemble the more powerful in their appetites for prey, but have not ſuch certain methods of obtaining it. In general, therefore,

the induſtry of this tribe and their audacity increaſe in proportion to their imbecility. The cormorant, or as we may more properly ſay, all the great gulls, live at the moſt remote diſtance from man; the ſmaller are obliged to reſide wherever they can take their prey, and to come into the moſt populous places when ſolitude can no longer grant them a ſupply.

The generality of naturaliſts have placed in this tribe of the gull, properly ſo called, not only its own varieties, conſiſting of more than twenty, but alſo thoſe of the petrel, and of the ſea-ſwallow, which together are ſix or ſeven more; of theſe, however, the gulls may be diſtinguiſhed by an angular knob on the lower chap; the petrels by their wanting this knob; and the ſea-ſwallow by their bills, which are ſtraight, ſlender, and ſharp pointed. They all, however, agree in their appetites and their places of abode.

The gull, and all its varieties, is very well known in every part of the kingdom. "It is, "ſays an ingenious modern, ſeen with a flow- "ſailing flight hovering over rivers to prey "upon the ſmaller kinds of fiſh; it is ſeen "following the ploughman in fallow fields "to pick up inſects; and when living animal

"food

" food does not offer, it has even been known " to eat carrion, and whatever elſe of the kind " that it finds. Gulls are found in great plenty " in every place; but it is chiefly round our " boldeſt rockieſt ſhores that they are ſeen in " the greateſt abundance; it is there that the " gull breeds and brings up its young; it is " there that millions of them are heard ſcream- " ing with diſcordant notes for months toge- " ther.

" Thoſe who have been much upon our " coaſts know that there are two different " kinds of ſhores; that which ſlants down to " the water with a gentle declivity, and that " which riſes with a precipitate boldneſs, and " ſeems ſet as a bulwark to repel the force of " the invading deeps. It is to ſuch ſhores as " theſe that the whole tribe of the gull-kind re- " ſort, as the rocks offer them a retreat for " their young, and the ſea a ſufficient ſupply. " It is in the cavities of theſe rocks, of which " the ſhore is compoſed, that the vaſt variety " of ſea-fowls retire to breed in ſafety. The " waves beneath, that continually beat at the " baſe, often wear the ſhore into an impend- " ing boldneſs; ſo that it ſeems to jut out " over the water, while the raging of the ſea

" makes

" makes the place inacceſſible from below.
" Theſe are the ſituations to which ſea-fowl
" chiefly reſort, and bring up their young in
" undiſturbed ſecurity.

" Thoſe who have never obſerved our bold-
" eſt coaſts have no idea of their tremendous
" ſublimity. The boaſted works of art, the
" higheſt towers, and the nobleſt domes, are
" but ant-hills when put in compariſon: the
" ſingle cavity of a rock often exhibits a coping
" higher than the cieling of a Gothic cathe-
" dral. The face of the ſhore offers to the
" view a wall of maſſive ſtone; ten times
" higher than our talleſt ſteeples. What
" ſhould we think of a precipice three quar-
" ters of a mile in height? and yet the rocks
" of St. Kilda are ſtill higher! What muſt be
" our awe to approach the edge of that im-
" pending height, and to look down on the un-
" fathomable vacuity below; to ponder on the
" terrors of falling to the bottom, where the
" waves that ſwell like mountains are ſcarcely
" ſeen to curl on the ſurface, and the roar of
" a thouſand leagues broad appears ſofter than
" the murmurs of a brook? It is in theſe for-
" midable manſions that myriads of ſea-fowls
" are for ever ſeen ſporting, flying in ſecurity

" down

" down the depth, half a mile beneath the feet
" of the ſpectator. The crow and the chough
" avoid thoſe frightful precipices; they chuſe
" ſmaller heights, where they are leſs expoſed
" to the tempeſt; it is the cormorant, the gan-
" net, the tarrock, and the terne, that venture
" to thoſe dreadful retreats, and claim an un-
" diſturbed poſſeſſion. To the ſpectator from
" above, thoſe birds, though ſome of them are
" above the ſize of an eagle, ſeem ſcarce as
" large as a ſwallow; and their loudeſt ſcream-
" ing is ſcarce perceptible.

" But the generality of our ſhores are not ſo
" formidable. Though they may riſe two hun-
" dred fathoms above the ſurface, yet it often
" happens that the water forſakes the ſhore at
" the departure of the tide, and leaves a noble
" and delightful walk for curioſity on the beach.
" Not to mention the variety of ſhells with
" which the ſand is ſtrewed, the lofty rocks
" that hang over the ſpectator's head, and that
" ſeem but juſt kept from falling, produce in
" him no unpleaſing gloom. If to this be
" added the fluttering, the ſcreaming, and the
" purſuits of myriads of water-birds, all either
" intent on the duties of incubation, or rouſed
" at the preſence of a ſtranger, nothing can

" compoſe

" compoſe a ſcene of more peculiar ſolemnity.
" To walk along the ſhore when the tide is de-
" parted, or to ſit in the hollow of a rock when
" it is come in, attentive to the various ſounds
" that gather on every ſide, above and below,
" may raiſe the mind to its higheſt and nobleſt
" exertions. The ſolemn roar of the waves
" ſwelling into and ſubſiding from the vaſt ca-
" verns beneath, the piercing note of the gull,
" the frequent chatter of the guillemot, the
" loud note of the auk, the ſcream of the heron,
" and the hoarſe deep periodical croaking of
" the cormorant, all unite to furniſh out the
" grandeur of the ſcene, and turn the mind to
" HIM who is the eſſence of all ſublimity.

" Yet it often happens that the contempla-
" tion of a ſea-ſhore produces ideas of an hum-
" bler kind, yet ſtill not unpleaſing. The va-
" rious arts of theſe birds to ſeize their prey,
" and ſometimes to elude their purſuers, their
" ſociety among each other, and their tender-
" neſs and care of their young, produce gentle
" ſenſations. It is ridiculous alſo now and
" then to ſee their various ways of impoſing
" upon each other. It is common enough, for
" inſtance, with the arctic gull, to purſue the
" leſſer gulls ſo long, that they drop their ex-

" crements

" crements through fear, which the hungry " hunter ſoon gobbles up before it ever reaches " the water. In breeding too they have fre- " quent conteſts: one bird who has no neſt of " her own, attempts to diſpoſſeſs another, and " put herſelf in the place. This often happens " among all the gull-kind; and the poor bird, " thus diſplaced by her more powerful invader, " will ſit near the neſt in penſive diſcontent, " while the other ſeems quite comfortable in " her new habitation. Yet this place of pre- " eminence is not eaſily obtained; for the in- " ſtant the invader goes to ſnatch a momentary " ſuſtenance, the other enters upon her own, " and always ventures another battle before ſhe " relinquiſhes the juſtneſs of her claim. The " contemplation of a cliff thus covered with " hatching-birds, affords a very agreeable en- " tertainment; and as they ſit upon the ledges " of the rocks, one above another, with their " white breaſts forward, the whole group has " not unaptly been compared to an apothe- " cary's ſhop.

" Theſe birds, like all others of the rapa- " cious kind, lay but few eggs; and hence, in " many places, their number is daily ſeen to " diminiſh. The leſſening of ſo many rapa-

" pacious birds may, at firſt ſight, appear a be-
" nefit to mankind; but when we conſider how
" many of the natives of our iſlands are ſuſtain-
" ed by their fleſh, either freſh or ſalted, we
" ſhall find no ſatisfaction in thinking that theſe
" poor people may in time loſe their chief ſup-
" port. The gull, in general, as was ſaid,
" builds on the ledges of rocks, and lays from
" one egg to three, in a neſt formed of long
" graſs and ſea-weed. Moſt of the kind are
" fiſhy taſted, with black ſtringy fleſh; yet
" the young ones are better food: and of theſe,
" with ſeveral other birds of the penguin kind,
" the poor inhabitants of our northern iſlands
" make their wretched banquets. They have
" been long uſed to no other food; and even a
" ſalted gull can be reliſhed by thoſe who know
" no better. Almoſt all delicacy is a relative
" thing; and the man who repines at the luxu-
" ries of a well-ſerved table, ſtarves not for
" want but from compariſon. The luxuries of
" the poor are indeed coarſe to us, yet ſtill
" they are luxuries to thoſe ignorant of better;
" and it is probable enough that a Kilda or a
" Feroe man may be found to exiſt, out-doing
" Apicius himſelf, in conſulting the pleaſures
" of the table. Indeed, if it be true, that ſuch

" meat

" meat as is the moſt dangerous earned is the " ſweeteſt, no man can dine ſo luxurioufly as " theſe, as none venture ſo hardily in the pur- " ſuit of a dinner."

In Jacobſon's Hiſtory of the Feroe Iſlands, we have the following account of the method in which theſe birds are taken: " It cannot be " expreſſed with what pains and danger they " take theſe birds in thoſe high ſteep cliffs, " whereof many are two hundred fathoms high. " But there are men apt by nature and fit for " the work, who take them uſually in two man- " ners: they either climb from below into " theſe high promontories, that are as ſteep as " a wall; or they let themſelves down with a " rope from above. When they climb from " below, they have a pole five or ſix ells long, " with an iron hook at the end, which they " that are below in the boat, or on the cliff, " faſten unto the man's girdle, helping him up " thus to the higheſt place where he can get " footing: afterwards they alſo help up ano- " ther man; and thus ſeveral climb up as " high as poſſibly they can; and where they " find difficulty, they help each other up by " thruſting one another up with their poles. " When the firſt hath taken footing, he draws

" the other up to him, by the rope faſtened to
" his waiſt; and ſo they proceed, till they come
" to the place where the birds build. They
" there go about as well as they can, in thoſe
" dangerous places; the one holding the rope
" at one end, and fixing himſelf to the rock;
" the other going at the other end from
" place to place. If it ſhould happen that he
" chanceth to fall, the other that ſtands firm
" keeps him and helps him up again. But if
" he paſſeth ſafe, he likewiſe faſtens himſelf till
" the other has paſſed the ſame dangerous place
" alſo. Thus they go about the cliffs after
" birds as they pleaſe. It often happeneth,
" however, the more is the pity, that where
" one doth not ſtand faſt enough, or is not
" ſufficiently ſtrong to hold up the other in his
" fall, that they both fall down and are killed.
" In this manner ſome do fall every year."

Mr. Peter Clanſon, in his deſcription of Norway, ſtates, that there was anciently a law in that country, that whoſoever climbed ſo on the cliffs, that he fell down and died, if the body was found, before burial, his next kinſman ſhould go the ſame way; but if he durſt not, or could not do it, the dead body was not then to be buried in ſanctified earth, as the perſon

perſon was too full of temerity, and his own deſtroyer.

" When the fowlers," continues Jacobſon, " get, in the manner aforeſaid, to the birds " within the cliffs, where people ſeldom come, " the birds are ſo tame that they take them " with their hands; for they will not readily " leave their young. But when they are wild " they caſt a net, with which they are pro- " vided over them, and entangle them therein. " In the mean time, there lieth a boat beneath " in the ſea, wherein they caſt the birds killed; " and in this manner they can, in a ſhort time, " fill a boat with fowl. When it is pretty fair " weather, and there is good fowling, the " fowlers ſtay in the cliffs ſeven or eight days " together; for there are here and there holes " in the rocks, where they can ſafely reſt; and " they have meat let down to them with a line " from the top of the mountain. In the mean " time ſome go every day to them, to fetch " home what they have taken.

" Some rocks are ſo difficult, that they can " in no manner get unto them from below; " wherefore they ſeek to come down thereunto " from above. For this purpoſe they have a " rope, eighty or a hundred fathoms long,

" made

" made of hemp, and three inches thick.
" The fowler maketh the end of this faſt about
" his waiſt, and between his legs, ſo that he
" can ſit thereon; and is thus let down, with
" the fowling ſtaff in his hand. Six men hold
" by the rope, and let him eaſily down, laying
" a large piece of wood on the brink of the
" rock, upon which the rope glideth, that it
" may not be worn to pieces by the hard and
" rough edge of the ſtone. They have be-
" ſides, another ſmall line that is faſtened to
" the fowler's body; on which he pulleth, to
" give them notice how they ſhould let down
" the great rope, either lower or higher; or to
" hold ſtill, that he may ſtay in the place where-
" unto he is come. Here the man is in great
" danger, becauſe of the ſtones that are looſ-
" ened from the cliff, by the ſwinging of the
" rope, and he cannot avoid them. To re-
" medy this, in ſome meaſure, he hath uſually
" on his head a ſeaman's thick and ſhaggy cap,
" which defends him from the blows of the
" ſtones, if they be not too big; but if they are,
" which is frequently the caſe, it coſteth him his
" life: nevertheleſs, they continually put them-
" ſelves in that danger, for the wretched body's
" food ſake, hoping in God's mercy and protec-
" tion,

" tion, unto which the greateſt part of them de-
" voutly recommend themſelves when they go
" to work: otherwiſe, they ſay, there is no
" other great danger in it, except that it is a
" toilſome and artificial labour; for he that
" hath not learned to be ſo let down, and is
" not uſed thereto, is turned about with the
" rope, ſo that he ſoon groweth giddy, and
" can do nothing; but he that hath learned the
" art, conſiders it as a ſport, ſwings himſelf
" on the rope, ſets his feet againſt the rock,
" caſts himſelf ſome fathoms from thence, and
" ſhoots himſelf to what place he will; he knows
" where the birds are, he underſtands how to
" ſit on the line in the air, and how to hold the
" fowling-ſtaff in his hand; ſtriking therewith
" the birds that come or fly away: and when
" there are holes in the rocks, and it ſtretches
" itſelf out, making underneath as a ceiling,
" under which the birds are, he knoweth how
" to ſhoot himſelf in among them, and there
" take firm footing. There, when he is in
" theſe holes, he maketh himſelf looſe of the
" rope, which he faſtens to the crag of the rock,
" that it may not ſlip from him to the outſide
" of the cliff. He then goes about in the
" rock, taking the fowl, either with his hands

" or

" or with the fowling-ſtaff. Thus, when he " hath killed as many birds as he thinks fit, he " ties them in a bundle, and faſtens them to a " little rope, giving a ſign, by pulling, that " they ſhould draw them up. When he has " wrought thus the whole day, and deſires to " get up again, he ſitteth once more upon the " great rope, giving a new ſign that they " ſhould pull him up; or elſe he worketh him- " ſelf up, climbing along the rope, with his " girdle full of birds. It is alſo uſual, where " there are not folks enough to hold the great " rope, for the fowler to drive a poſt ſloping " into the earth, and to make a rope faſt there- " to, by which he lets himſelf down without " any body's help, to work in the manner " aforeſaid. Some rocks are ſo formed that " the perſons can go into their cavities by " land.

" Theſe manners are more terrible and dan- " gerous to ſee than to deſcribe; eſpecially if " one conſiders the ſteepneſs and height of the " rocks, it ſeeming impoſſible for a man to ap- " proach them, much leſs to climb or deſcend. " In ſome places, the fowlers are ſeen climbing " where they can only faſten the ends of their " toes and fingers; not ſhunning ſuch places,

" though

" though there be an hundred fathom between " them and the ſea. It is dear meat for theſe " poor people, for which they muſt venture " their lives; and many, after long venturing, " do at laſt periſh therein.

" When the fowl is brought home, a part " thereof is eaten freſh; another part, when " there is much taken, being hung up for " winter proviſion. The feathers are gather- " ed to make merchandize of, for other ex- " pences. The inhabitants get a great many " of theſe fowls, as God giveth his bleſſing " and fit weather. When it is dark and hazy " they take the moſt; for then the birds ſtay " in the rocks: but in clear weather, and hot " ſun-ſhine they ſeek the ſea. When they pre- " pare to depart for the ſeaſon, they keep " themſelves moſt there, ſitting on the cliffs " towards the ſea-ſide, where the people get at " them ſometimes with boats, and take them " with fowling-ſtaves."

Strange and almoſt incredible as the above account may appear, the circumſtances are too well known to leave the ſmalleſt doubt of this author's veracity; and the hardihood of the people who inhabit the rocky ſhores of the northern parts of Europe, in theſe purſuits, is al-

moſt proverbial; with many of them the birds ſo taken conſtitute the chief part of their food, and therefore poſſibly it is that neceſſity has taught them to put danger at defiance. The feathered inhabitants, or rather viſitants of theſe rocks, are of different ſorts, conſiſting of all the varieties of the gull, penguin, auk, puffing and guillemot kinds; they reſort thither early in the ſpring, and the breeding ſeaſon being over, they prepare for their departure towards the more ſouthern climates at the commencement of winter, at which period it is that the people are moſt buſily employed in theſe adventurous undertakings, making it, as it were, a kind of harveſt for laying in a ſtore for their winter ſubſiſtence.

But to return to the ſubject more immediately under conſideration. The whole tribe of gulls are extremely rapid in flight, and will continue upon the wing hovering over the waters in ſearch after prey for ſeveral hours together; they are extremely voracious, and appear to be always in want. They differ very much both in ſize and plumage, but the moſt general and moſt diſtinctive are,

The *great Grey Gull* which weighs twelve or fourteen ounces, and is from the point of the

the bill to the extremity of the tail, about twenty inches; and from the point of each wing when extended, very near four feet. The bill is black, and near three inches long, the upper mandible ſomething longer than the under, and a little hooked, or inclining downwards over it; the lower has a riſing, or crooked ſet, towards the extremity: the eyes are grey, the noſtrils in a ſort of oblong form, the head very large; the necks of theſe birds in general are ſo ſhort, that when they walk or ſtand, they appear ſo much ſunk, or drawn down towards the ſhoulders, as one would almoſt imagine they had not any neck at all.

The upper ſide of the back and neck, are grey, intermixed with a whitiſh brown; the back feathers black in the middle, and aſh-coloured towards the edges, the wing feathers are of a dark brown, intermixed with black; the throat, breaſt, belly and thighs, white; the rump is of the ſame colour, with a few brown ſpots interſperſed. The tail is five or ſix inches long, the outmoſt tip of the feathers, on the upper ſide, are joined by a ſort of black croſs bars, near two inches broad; the under part alſo varied with a few duſky coloured lines.

The legs and feet are yellow, or orange coloured, and the claws black.

The *Brown Gull* is conſiderably leſs than the former, the bill is about an inch and half long, black towards the extremity, the reſt of a light brown or horn colour, ſhaped much like the former; the eyes are ſmall, the circles yellow, the noſtrils in an oblong form. The head and all the upper parts of the body and wings are of a duſky ſort of brown colour, except ſome of the prime feathers of the wings, which are quite black. The belly and breaſt are of a more bright colour, interſperſed with a conſiderable number of tranſverſe brown lines. The tail is black, the legs and feet of a browniſh yellow, the claws black.

This ſeems to be an uncommon bird, and not much known to authors that have written upon the ſubject, being claſſed among the gull kind, chiefly from the reſemblance of its bill and legs, Mr. Albin ſays it ſeems to be a nondeſcript bird.

The *Brown Headed Gull* is much about the ſize of the former, the bill is red and ſharp pointed: the under mandible bunching out into a ſmall angle, the eyes black, the irides or circles red; encompaſſed with a broad circle of pale,

pale, or white feathers; the head and neck brown, the lower part towards the breaſt more duſky; the covert feathers of the wings and the back are of an aſh-colour, the prime feathers black, with their outer edges, or webs white. The reſt of the body white, tinctured with a yellowiſh ſort of pale green.

The tail is near five inches long, the legs and feet red, the claws black. They are common about Graveſend, in the River Thames.

The *Black and White Gull* is by far the largeſt of the gull-kind, weighing generally upwards of four pounds, and being twenty-five or twenty-ſix inches, from the point of the bill to the end of the tail; and from the tip of each wing, when extended, five feet and ſeveral inches. The bill appears compreſſed ſideways, being more than three inches long, and hooked towards the end, like the reſt of this kind, of a ſort of orange colour; the noſtrils in an oblong form; the mouth wide, with a long tongue and very open gullet.

The irides of the eyes are of a very delightful red. The wings, and the middle of the back are black, only the tips of the covert and quill-feathers are white. The head, breaſt, tail, and other parts of the body are likewiſe white.

The

The tail is near ſix inches long, the legs and feet fleſh coloured, and the claws black. It is a ſea-fowl, and preys upon fiſhes, which have been taken whole from its ſtomach.

The *White Gull* is one of the ſmalleſt ſort, and does not weigh above eight or nine ounces; the form of the bill is very much like thoſe before deſcribed, and of a red colour, with an angle on the lower mandible: the irides of the eyes white, encircled with an aſh colour.

The prime feathers on the wings black, the tips and edges white, extended near two inches beyond the tail; the back and covert feathers grey, or aſh coloured; the head, breaſt, throat, and belly white, tinctured with a pale or faint yellow. The legs are bare of feathers above the knees, and of a duſky green colour, the claws ſmall, but more duſky and blackiſh.

They are ſaid to be uſeful in gardens, where they deſtroy the inſects and worms; their feed is chiefly ſmall fiſh.

The birds of this kind, are in many places called ſea-mews, in others ſea-cobs.

The *Skua Gull* is about the ſize of a raven; the upper parts of the head, neck, back and wings are of a deep brown, the under parts a pale, ruſty aſh colour. The legs are black, rough,

rough, and warty, and the talons very ſtrong and hooked. It is moſtly a native of the North, though often found in England. It is a moſt formidable bird, as it not only preys upon fiſh, but upon all the ſmaller water-fowl, and even on young lambs. It has the fierceneſs of the eagle in defending its young; and when the inhabitants of the Feroe Iſles attack its neſt, they hold a knife over their heads, on which the ſkua will transfix itſelf in its fall on the invaders. On the rocky iſland of Foula, one of the Shetland Iſles, it is a privileged bird, as it is ſaid to defend the flocks from the eagle, which it purſues and beats off with great fury, whenever he preſumes to viſit the iſland.

The *Wagel Gull* has its whole plumage compoſed of a mixed brown, aſh colour and white. It weighs about three pounds.

The *Herring Gull* reſembles the black and white in every thing but ſize, and that the plumage on the back and wings is more inclined to aſh colour than black; it weighs thirty ounces. The glacous gull, which inhabits Norway, &c. is rather larger than the herring gull, but reſembles it in moſt other reſpects. The ſilvery gull is the ſame ſize as the herring gull,

gull, and not much different in plumage and manners.

The *Tarrock*, and the *Kittiwake Gulls*, alſo ſo nearly reſemble each other, that ſome authors affirm the latter to be only the tarrock in a ſtate of perfection. The head, neck, belly, and tail of the kittiwake are of a ſnowy whiteneſs, the back and wings are grey; and both ſpecies have behind each ear a dark ſpot; both ſpecies are about the ſame ſize, viz. fourteen inches, and the tarrock weighs ſeven ounces. Of the *arctic gull* the male has the top of the head black; the back, wings, and tail duſky; the reſt of the body white: the female is entirely brown.

The *Pewit-gull*, or *Black-cap*, is ſo called from the head and throat being of a dark or black colour. The red-legged gull, the brown-throated gull, the laughing gull, which only differs from the others in having the legs black inſtead of red, are poſſibly only varieties of the ſame ſpecies. They are in length from fifteen to eighteen inches. The back and wings of theſe birds are in general aſh coloured, and the reſt of the body white. The young birds of theſe ſpecies are thought by ſome to be good eating.

The

The *Gnat Gull*, which is found on the borders of the Caſpian Sea, though diſtinguiſhed by a black head, is quite a different ſpecies from our black cap, as it equals in ſize the Barnacle gooſe, and weighs between two and three pounds: its voice too is as hoarſe as that of a raven.

The whole genus of *Petrels* are known by having inſtead of a black toe only a ſharp ſpur or nail; they have alſo a faculty of ſpouting from their bills, to a conſiderable diſtance, a large quantity of pure oil, which they do by way of defence, into the face of any perſon who attempts to take them.

The *Fulmar* is the largeſt of the kind which is known in theſe climates. It is ſuperior to the ſize of the common gull, being about fifteen inches in length, and in weight ſeventeen ounces. The bill is very ſtrong, yellow, and hooked at the end. The head, neck, and all the under parts of the body, are white; the back and wings aſh-coloured, the quills duſky, and the tail white. It feeds on the blubber of whales, which ſupplies the reſervoir, whence it ſpouts, with a conſtant ſtock of ammunition. This oil is eſteemed by the inhabitants of the North as a ſovereign remedy in many com-

plaints both external and internal. The fleſh is alſo conſidered by them as a delicacy, and the bird is therefore in great requeſt at St. Kilda. It is ſaid that when a whale is taken, theſe birds will, in defiance of all endeavours, light upon it, and pick out large lumps of fat even while it is alive.

The *Shearwater* is ſomething ſmaller than the preceding. The head, and all the upper parts of the body, are of a ſooty blackneſs; and the under part and inner coverts of the wings white. The birds are found in the Calf of Man, and the Scilly Iſles. In February they take poſſeſſion of the rabbit furrows, and then diſappear till April; they lay one egg, and in a ſhort time the young are fit to be taken. They are then ſalted and barrelled. During the day they keep at ſea fiſhing, and towards evening return to their young, whom they feed by diſcharging the contents of the ſtomach into their mouths.

The *Stormy Petrel* is about the ſize of a houſe ſwallow. The general colour of the plumage is black, except about the rump, which is white. They ſometimes hover over the water like ſwallows, and ſometimes appear to run on the top of it; they are alſo excellent divers.

divers. They are very clamorous, and are called by the ſailors *Mother Cary's* chickens, who obſerve that they never ſettle or ſit upon the water, but when ſtormy weather is to be expected. They are found in many parts of the world; and in the Feroe iſlands, the inhabitants draw a wick through the body of the bird, from the mouth to the rump, which ſerves them as a candle, being fed by the vaſt proportion of oil which this little animal contains.

There are about twenty ſpecies of foreign birds of this kind. In the high ſouthern latitudes one is found, which is the ſize of a gooſe, and on that account is called the giant petrel. The upper parts of its plumage are pale brown, mottled with duſky white; the under parts are white.

Mr. Anderſon, in Capt. Cook's laſt voyage, mentions a petrel found at Kerguelan's Land; which the ſeamen called Mother Carey's Gooſe; it is by far the largeſt known; "they were," ſays he, "ſo tame, that at firſt we could kill "them with a ſtick upon the beach. They "are not inferior in ſize to an albatroſs, and "are carnivorous, feeding on the dead car-

" caſſes of ſeals or birds, that were thrown " into the ſea. Their colour is a ſooty brown, " with a greeniſh bill and feet." This Mr. Anderſon conſidered to be the ſame bird that is deſcribed by Pernetty, in his voyage to the Falkland Iſlands, and is called *quebrantehueſſos* by the Spaniards.

The *great Tern*, or *Sea Swallow*, is about fourteen inches long, and weighs four ounces and a quarter. The bill and feet are a fine crimſon, the former is tipt with black, and very ſlender. The back of the head is black; the upper part of the body is a pale grey, and the under part white. The birds have been called ſea ſwallows, from appearing to have all the ſame actions at ſea that the ſwallow has at land, ſeizing every inſect which appears on the ſurface, and darting down upon the ſmaller fiſhes, which they ſeize with incredible rapidity.

The *leſſer Tern* weighs only two ounces five grains. The bill is yellow, and from the eyes to the bill is a black line. In other reſpects it almoſt exactly reſembles the preceding.

The *black Tern* is of a middle ſize between the two preceding ſpecies. It weighs two ounces and a half. It receives its name from being

being all black as far as the vent, except a ſpot white under the throat. This bird is called in ſome parts the ear ſwallow. It is a very noiſy animal.

Among the foreign birds of the tern genus, there are ſome found of a ſnowy white; but the moſt ſingular bird of the kind is the *ſtriated Tern*, which is found at New Zealand. It is thirteen inches in length. The bill is black, and the body in general mottled, or rather ſtriped with black and white. The *noddy* is about fifteen inches long, and the whole plumage a ſooty brown, except the top of the head, which is white. It is a very common bird in the tropical ſeas, where it is known frequently to fly on board ſhips, and is taken with the hand. But though it be thus ſtupid, it bites the fingers ſeverely, ſo as to make it unſafe to hold it. It is ſaid to breed in the Bahama iſlands.

THE PENGUIN AND ITS AFFINITIES.

AS we have juſt remarked, the whole tribe of gulls, even if we include them from the cormorant to the ſea-ſwallow, are long winged, ſwift flyers, that hover over the moſt extenſive ſeas, and dart down upon ſuch fiſh as approach too near the ſurface; whereas the penguin kind are but ill fitted for flight, and ſtill leſs for walking; conſequently we behold them the almoſt conſtant inhabitants of the ſea, living upon fiſh which they can purſue to the greateſt depths.

The aukward manner in which a duck, either wild or tame, attempts to take wing muſt have ſtruck every obſerver; it is alſo remarkable with what ſoftneſs and eaſe a gull or a kite waves its pinions, and with what a coil and flutter the duck attempts to move them; how many ſtrokes the latter is obliged to give, in order to gather a little air; and even when it is thus raiſed, how ſoon, comparatively, it is fatigued

The Auk.

The Penguin.

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fatigued with the force of its exertions, and obliged to take reſt. But the duck is not, in its natural ſtate, half ſo unwieldy an animal as the whole tribe of the penguin kind. Their wings are much ſhorter, more ſcantily furniſhed with quills, and their pinions placed too forward to be uſefully employed. Therefore it is by no means wonderful that the largeſt of the penguin kind, that have a thick, heavy body to raiſe, cannot fly at all. Their wings ſerve them rather as paddles to help them forward, when they attempt to move ſwiftly; and in a manner walk along the ſurface of the water. Even the ſmaller kinds ſeldom fly by choice; they flutter their wings with the ſwifteſt effort without making way; and though they have but a ſmall weight of body to ſuſtain, yet they ſeldom venture to quit the water where they are provided with food and protection.

The wings of the penguin tribe are unfitted for flight, and their legs are ſtill more aukwardly adapted for walking. The whole tribe have all above the knee hid within the belly; and nothing appears but two ſhort legs, or feet, as ſome would call them, that ſeem ſtuck under the rump, and upon which the animal is very aukwardly ſupported. They ſeem, when ſitting,

or attempting to walk, like a dog that has been taught to ſit up, or to walk on his hind legs. Their ſhort legs drive the body in progreſſion from ſide to ſide; and were they not aſſiſted by their wings, they could ſcarcely move faſter than a tortoiſe.

This aukward poſition of the legs, which ſo unqualifies them for living upon land, adapts them admirably for a reſidence in water. In that, the legs placed behind the moving body, puſhes it forward with greater velocity; and theſe birds, like Indian canoes, are the ſwifteſt in the water, by having their paddles in the rear. Our ſailors, for this reaſon, give theſe birds a very homely, but at the ſame time expreſſive name.

Nor are they leſs qualified for diving than ſwimming. By ever ſo little inclining their bodies forward, they loſe their centre of gravity; and every ſtroke from their feet only tends to ſink them the faſter. In this manner they can either dive at once to the bottom, or ſwim between two waters; where they continue fiſhing for ſome minutes, and then aſcending, catch an inſtantaneous breath, to deſcend again to renew their operations. Hence it is that theſe birds which are ſo defenceleſs, and ſo eaſily

eaſily taken by land, are impregnable by water. If they perceive themſelves purſued in the leaſt, they inſtantly ſink, and ſhew nothing more than their bills, till the enemy is withdrawn. Their very internal confirmation aſſiſts their powers in keeping long under water. Their lungs are fitted with numerous vacuities, by which they can take in a very large inſpiration; and this probably ſerves them for a length of time.

As they never viſit land, except when they come to breed, the feathers take a colour from their ſituation. That part of them which has been continually bathed in the water, is white; while their backs and wings are of different colours, according to the different ſpecies. They are alſo covered more warmly all over the body with feathers, than any other bird whatever; ſo that the ſea ſeems entirely their element; and but for the neceſſary duties of propagating the ſpecies, it is probable we ſhould ſcarcely have the ſmalleſt opportunity of ſeeing them, and ſhould be utterly unacquainted with their hiſtory.

Of all this tribe, the *Magellanic Penguin* is the moſt ſingular and remarkable. In ſize it approaches that of a tame gooſe. It never

flies, as its wings are very ſhort, and covered with ſtiff hard feathers, and are always ſeen expanded, and hanging uſeleſs down by the bird's ſides. The upper part of the head, back and rump, are covered with ſtiff, black feathers; while the belly and breaſt, as is common with all of this kind, are of a ſnowy whiteneſs, except a line of black that is ſeen to croſs the crop. The bill, which from the baſe to about half way is covered with wrinkles, is black, but marked croſswiſe with a ſtripe of yellow. They walk erect with their heads on high, their fin-like wings hanging down like arms; ſo that to ſee them at a diſtance, they look like ſo many children with white aprons. From hence they are ſaid to unite in themſelves the qualities of men, fowls and fiſh. Like men, they are upright; like fowls they are feathered; and like fiſhes they have fin-like inſtruments, that beat the water before, and ſerve for all the purpoſes of ſwimming rather than flying.

They feed upon fiſh: and ſeldom come aſhore, except in the breeding-ſeaſon. As the ſeas in that part of the world abound with a variety, they ſeldom want food; and their extreme fatneſs ſeems a proof of the plenty in which they live. They dive with great rapidity,

dity, and are voracious to a great degree. One of them, deſcribed by Cluſius, though but very young, would ſwallow an entire herring at a mouthful, and often three ſucceſſively before it was appeaſed. In conſequence of this gluttonous appetite, their fleſh is rank and fiſhy; though the Engliſh ſailors ſay, that "it is pretty good eating." In ſome, the fleſh is ſo tough, and the feathers ſo thick, that they ſtand a blow of a ſcymitar without injury.

They are a bird of ſociety; and eſpecially when they come on ſhore, they are ſeen drawn up in rank and file, upon the ledge of a rock, ſtanding together with the albatroſs, as if in conſultation. This is previous to their laying, which generally begins in that part of the world in the month of November. Their preparations for laying are attended with no great trouble, as a ſmall depreſſion in the earth, without any other neſt, ſerves for this purpoſe. The warmth of their feathers and the heat of their bodies is ſuch, that the progreſs of incubation is carried on very rapidly.

In other countries, however, this bird neſtles in a very different manner, and which moſt of our naturaliſts aſcribe to the frequent diſturbances it has received from man or quadrupeds,

in its former receſſes. In ſome places, inſtead of contenting itſelf with a ſuperficial depreſſion in the ground, the penguin is found to burrow two or three yards deep; in others it is ſeen to forſake the level, and to clamber up the ledge of a rock, where it lays its egg, and hatches it in that bleak, expoſed ſituation; and which precautions moſt probably have been adopted in conſequence of dear bought experience. In thoſe countries where the bird fears for her own ſafety, or that of her young, ſhe may providentially provide againſt danger, by digging or even by climbing; for both which ſhe is but ill adapted by nature. In thoſe places however, where the penguin has had but few viſits from man, her neſt is made, with the moſt confident ſecurity, in the middle of ſome large plain where they are ſeen by thouſands. In that unguarded ſituation, neither expecting nor fearing a powerful enemy, they continue to ſit brooding; and even when man comes among them, have at leaſt no apprehenſion of their danger. Some of this tribe have been called, the booby, from the total inſenſibility which they ſhew when they are ſought to their deſtruction. "But it is not conſidered that theſe "birds have never been taught to know the "dangers

" dangers of an human enemy; it is againſt the " fox or the vulture that they have learned to " defend themſelves; but they have no idea of " injury from a being ſo very unlike their na- " tural oppoſers. The penguins, therefore, " when our ſeamen firſt came amongſt them, " tamely ſuffered themſelves to be knocked on " the head, without even attempting an eſcape. " They have ſtood to be ſhot at in flocks, with- " out offering to move, in ſilent wonder, till " every one of their number has been deſtroy- " ed. Their attachment to their neſts was " ſtill more powerful; for the females tamely " ſuffered the men to approach and take their " eggs, without any reſiſtance. But the expe- " rience of a few of theſe unfriendly viſits, has " long ſince taught them to be more upon their " guard in chuſing their ſituations; or to leave " thoſe retreats where they were ſo little able " to oppoſe their invaders."

The penguin lays but one egg; and, in frequented ſhores is found to burrow like a rabbit: ſometimes three or four take poſſeſſion of one hole, and hatch their young together. In the holes of the rocks, where nature has made them a retreat, ſeveral of this tribe, as Linnæus aſſures us, are ſeen together. There the females

males lay their ſingle egg in a common neſt, and ſit upon this their general poſſeſſion by turns; while one is placed as a centinel, to give warning of approaching danger. The eggs of the penguin, as well as of all this tribe, is very large for the ſize of the bird, being generally found bigger than that of a gooſe. But as there are many varieties of the penguin, and as they differ in ſize, from that of a muſcovy duck to a ſwan, the eggs differ in the ſame proportion.

As far as is at preſent known, the penguins conſiſt of about nine ſpecies, and they are commonly eſtimated to hold the ſame place in the ſouthern parts of the world as the auks do in the north, neither of them having been obſerved within the tropics.

The one commonly denominated the *Patagonian Penguin*, is by much the largeſt, ſome of them weigh at leaſt forty pounds, and are four feet three or four inches in length. The bill meaſures four inches and a half, but is ſlender. The head, throat, and hind part of the neck is brown, the back of a deepiſh aſh-colour, and all the under parts white. The beſt known *Penguin* is not bigger than a common gooſe, the upper parts of whoſe plumage is black,

black, and the under white. At Falkland's iſlands there are ſeveral varieties of penguins, ſome of which are creſted, and are beautiful birds. There is a ſpecies at New Zealand not larger than a teal, and in almoſt all parts of the South Seas they are found in abundance, of all kinds and of all ſizes.

OF THE AUK, PUFFIN, AND THEIR AFFINITIES.

UNDER this denomination comes a race conſiſting of about twelve different ſpecies.—They differ in ſize from the preceding, but poſſeſs nearly the ſame form, appetites, and manners: but the whole of this tribe are particularly diſtinguiſhed, by the form of the bill, which is ſtrong, convex, compreſſed at the ſides, in general croſſed with ſeveral furrows and in ſome degree reſembling the coulter of a plough. Like the penguin, they frequent our ſhores, and have their legs placed behind. They have

have ſhort wings, which are not totally incapable of flight; and they have round bills for ſeizing their prey, which is fiſh. They live upon the water, in which they are continually ſeen diving, and ſeldom venture upon land, except for the purpoſes of continuing their kind.

The principal of this tribe are the great Northern Diver, which is nearly of the ſize of a gooſe, and differs from the penguin, in being more ſlender and more elegantly formed; the grey ſpeckled diver, which does not exceed the ſize of a Muſcovy duck: and, except in ſize, greatly reſembles the former; the auk, which chiefly differs from the penguin in ſize and colour, being ſmaller than a duck, and the whole of the breaſt and belly, as far as the middle of the throat, is white; the guillemot, which is about the ſame ſize, and which differs from the aux, in having a longer, a more ſlender, and a ſtraighter bill; the ſcarlet throated diver may be diſtinguiſhed by its name; and the puffin or coulterneb, is one of the moſt remarkable birds we know.

The *great Northern Diver*, as before obſerved, is full as large as a common gooſe; it has a black ſharp bill, white at the point, and near five inches long; the head and neck of a

ſort

ſort of duſky brown colour, with a ſpot of white under its bill, and a white ring about its neck; below which the neck appears of a greeniſh colour. The prime feathers of each wing are black, except the exterior edges, which are white; the breaſt and belly are much of the ſame colour, the covert feather of the wings, and the back, are irregularly ſpotted with white. The outward toe is near five inches long, and the feet are webbed like thoſe of a gooſe.

The *Speckled Diver* is not quite ſo large as the preceding, it has a ſtraight ſharp bill, of a ſort of livid or black colour, with feathers growing down as low as the noſtrils, that part of the neck next to the head is covered with feathers ſet ſo exceeding thick, that it looks as large as the head itſelf, the lower parts of the body are white, the upper parts of a duſky ſort of dark grey, ſpeckled over with white ſpots, which are larger upon the wings than on the reſt of the body, the fore toes are very long, eſpecially the outermoſt, the back toes are but little, and ſhort, the legs of a brown colour, and not very long, and are placed ſo back, that the bird ſeems ſcarce able to walk without erecting itſelf perpendicularly on its tail, which is very ſhort. Some of theſe birds have a ſort of ring,

about their necks, with blacker heads, and ſprinkled with little white ſpecks, and lines; others are more grey, or aſh-coloured, and varied with white ſpecks, but no lines, which may perhaps be the diſtinction between the cocks and the hens.

The *Sea Diver* weighs about three pounds; the bill is upwards of two inches and half long; the whole body is covered with fine ſoft thick feathers, the head and neck of a brown colour, but the back darker, each ſide of the body more duſky, the breaſt and belly inclining pretty much to a ſilver colour. It has not any tail at all; the outermoſt quill feathers of the wings, are blackiſh, the leſſer rows underneath are white.

The bill appears compreſſed ſideways, and is narrow, of a reddiſh colour; the tongue a little cloven, the eyes dark with a ſort of red mixture. The claws appear broad, reſembling in ſome degree the nails of a man's hand, on one ſide quite black, the other of a pale blue, or rather of an aſh-colour, the outermoſt toe longer than the reſt, both the legs and toes, are broad and flat. It feeds on ſmall fiſhes, ſea weeds, &c.

The

The *Creſted Diver* is about the ſize of a duck; the bill, that part eſpecially towards the head is of a reddiſh colour, and in length is ſomething more than two inches; on the top of the head and neck, is a beautiful creſt of feathers, thoſe on the neck appearing like a collar or ruff, and ſeem a good deal bigger than they really are; thoſe on the top of the head are black, thoſe on the ſides of the neck, are of a reddiſh or cinerous colour; the back and wings are of a darkiſh brown, pretty much inclining to black, except ſome of the exterior edges of the wing feathers which are white. The breaſt and belly are of a light aſh-colour, it has no tail, the legs and toes broad, and flat, much like thoſe before deſcribed. It has an unpleaſant cry, and will occaſionally, when angered or pleaſed, raiſe or fall the feathers of his creſt.

The *Great Auk* is the ſize of a gooſe; its bill is black, about four inches and a quarter in length, and covered at the baſe with ſhort velvet-like feathers. The upper parts of the plumage are black, and the lower parts white, with a ſpot of white between the bill and the eyes, and an oblong ſtripe of the ſame on the wings, which are too ſhort for flight. The bird is alſo a very bad walker, but ſwims and dives well.

It is however obſerved by ſeamen, that it is never ſeen out of ſoundings, ſo that its appearance ſerves as an infallible direction to land. It feeds on the lump-fiſh and others of the ſame ſize; and is frequent on the coaſt of Norway, Greenland, Newfoundland, &c. It lays its eggs cloſe to the ſea mark.

The *Razor Bill* is not ſo large as the common tame duck, and has a large bill of a deep black colour, and near two inches long; with a deep inciſion or furrow in the upper mandible, which runs a little beyond the noſtrils, and is in ſome degree covered with a ſort of nappy thick down like velvet; the upper part being crooked at the end and hanging over the under, with tranſverſe channelled lines running croſs each, and a narrow white line paſſing from each eye to the corner of the upper mandible. The inner part of the mouth is of a fine yellow, and the eyes of hazel colour. The head and upper part of the body are black; the under part of the chin more purple, the breaſt, belly, and tips of the covert feathers of the wings white. The tail is black, and about three inches long; the legs, feet, and toes pretty much of the ſame colour. They breed on the edges of

ſteep

ſteep craggy rocks, by the ſea-ſhore, laying large white eggs ſpotted with black.

The *Guillemot* is about the ſize of a common duck, the upper parts of the body are of a dark brown colour, inclining to a black, except the tips of ſome of the wing feathers which are white, all the under parts of the body are alſo white. The tail is about two inches long.

It is a ſimple bird and eaſily taken, they generally go in companies with the coulternebs, and birds of that kind, and breed much in the ſame manner.

They breed on the inacceſſible rocks, and ſteep cliffs in the Iſle of Man, and likewiſe in Cornwall; on Preſtholm Iſland near Beaumaris in the Iſle of Angleſey; alſo on the Fern Iſland near Northumberland, and in the cliffs about Scarborough, in Yorkſhire, and ſeveral other places in England. They lay exceeding large eggs, being full three inches long, blunt at one end, and ſharp at the other, of a ſort of bluiſh green colour, ſpotted generally with ſome black ſpots or ſtrokes.

The *leſſer Guillemot* weighs about ſixteen ounces. The upper parts of its plumage are darker than thoſe of the former ſpecies. The black

guillemot

guillemot is entirely black, except a large mark of white on the wings. In winter, however, this bird is ſaid to change to white; and there is a variety in Scotland not uncommon, which is ſpotted, and which Mr. Edwards has deſcribed under the name of the ſpotted Greenland dove. The marbled guillemot, which is found at Kamtſchatka, &c. received its name from its plumage, which is duſky, elegantly marbled with white.

The *Puffin* is about the ſize of a teal, it weighs near twelve ounces, and is generally twelve inches in length. The eyes are aſh-coloured or grey; the upper part of the head and body are black, the lower parts white; it has a ſort of black ring that encompaſſes the throat; the ſides of the head are whitiſh, with a caſt of yellow and aſh-colour; the wings are made up of ſhort feathers, and are very ſmall; they fly ſwift while they keep near the ſurface of the water, by reaſon of wetting their wings as they proceed. They have black tails about two inches long: the legs and feet are of an orange colour, and their claws of a dark blue. It would be very difficult to deſcribe the form of the bill of the puffin, which differs ſo greatly from

from that of any other bird. Thoſe who have ſeen the coulter of a plough, may form ſome idea of the beak of this odd-looking animal. The bill is flat; but, very different from that of the duck, its edge is upwards. It is of a triangular figure, and ending in a ſharp point; the upper chap bent a little downward, where it is joined to the head: and a certain callous ſubſtance encompaſſing its baſe, as in parrots. It is of two colours; aſh-coloured near the baſe, and red towards the point. It has three furrows or grooves impreſſed in it; one in the livid part, two in the red. The eyes are fenced with a protuberant ſkin, of a livid colour; and they are grey or aſh coloured. Theſe are marks ſufficient to diſtinguiſh this bird by; but its value to thoſe in whoſe vicinity it breeds, renders it ſtill more an object of curioſity.

The puffin, like all the reſt of this kind, has its legs thrown ſo far back, that it can hardly move without tumbling. This makes it riſe with difficulty, and ſubject to many falls before it gets upon the wing; but as it is a ſmall bird, not much bigger than a pigeon, when it once riſes, it can continue its flight with great celerity.

Both

Both this and all the former build no neſt; but lay their eggs either in the crevices of rocks, or in holes under ground near the ſhore. They chiefly chuſe the latter ſituation; for the puffin, the auk, the guillemot, and the reſt, cannot eaſily riſe to the neſt when in a lofty ſituation. Many are the attempts theſe birds are ſeen to make to fly up to thoſe neſts which are ſo high above the ſurface. In rendering them inacceſſible to mankind, they almoſt render them inacceſſible to themſelves. They are frequently obliged to make three or four efforts, before they can come at the place of incubation. For this reaſon, the auk and guillemot, when they have once laid their ſingle egg, which is extremely large for their ſize, ſeldom forſake it until it is excluded. The male, who is better furniſhed for flight, feeds the female during this interval; and ſo bare is the place where ſhe ſits, that the egg would often roll down from the rock, did not the body of the bird ſupport it.

But the puffin ſeldom chuſes theſe inacceſſible and troubleſome heights for its ſituation. Relying on its courage, and the ſtrength of its bill, with which it bites moſt terribly, it either makes

makes or finds a hole in the ground, where to lay or bring forth its young. "All the winter, (ſays Willoughby) theſe birds, like the reſt, are abſent; viſiting regions too remote for diſcovery. At the latter end of March, or the beginning of April, come over a troop of their ſpies or harbingers, that ſtay two or three days, as it were to view and ſearch out for their former ſituations, and ſee whether all be well. This done, they once more depart; and about the beginning of May return again with the whole army of their companions. But if the ſeaſon happens to be ſtormy and tempeſtuous, and the ſea troubled, the unfortunate voyagers undergo incredible hardſhips; and they are found by hundreds, caſt away upon the ſhores, lean and periſhed with famine. It is moſt probable, therefore, that this voyage is performed more on the water than in the air; and as they cannot fiſh in ſtormy weather, their ſtrength is exhauſted before they can arrive at their wiſhed-for harbour."

The puffing, when it prepares for breeding, which always happens a few days after its arrival, begins to ſcrape up a hole in the ground not far from the ſhore, and when it has ſome way penetrated the earth, it then throws itſelf

upon its back, and with its bill and claws thus burrows inward, till it has dug a hole with ſeveral windings and turnings, from eight to ten feet deep. It particularly ſeeks to dig under a ſtone, where it expects the greateſt ſecurity. In this fortified retreat it lays one egg; which, though the bird be not much bigger than a pigeon, is full the ſize of that of a hen.

When the young one is excluded, the parents' induſtry and courage is incredible. Few birds or beaſts will venture to attack them in their retreats. When the great ſea-raven, as Jacobſon informs us, comes to take away their young, the puffins boldly oppoſe him. Their meeting affords a moſt ſingular combat. As ſoon as the raven approaches, the puffin catches him under the throat with its beak, and ſticks its claw into his breaſt, which makes the raven, with a loud ſcreaming, attempt to get away; but the little bird ſtill holds faſt to the invader, nor lets him go till they both come to the ſea, where they drop down together, and the raven is drowned: yet the raven is but too often ſucceſsful, and invading the puffin at the bottom its hole, devours both the puffin and its family.

"But, Goldſmith obſerves with much pro-
"priety, were a puniſhment to be inflicted for
"immorality

" immorality in irrational animals, the puffin
" is juſtly a ſufferer from invaſion, as it is often
" itſelf one of the moſt terrible invaders.
" Near the Iſle of Angleſey, in an iſlet called
" Prieſholm, their flocks may be compared, for
" multitude, to ſwarms of bees. In another
" iſlet, called the Calf of Man, a bird of this
" kind, but of a different ſpecies, is ſeen in
" great abundance. In both places, numbers
" of rabbits are found to breed; but the puffin,
" unwilling to be at the trouble of making a
" hole, when there is one ready made, diſ-
" poſſeſſes the rabbits, and it is not unlikely
" deſtroys their young. It is in theſe unjuſtly
" acquired retreats that the young puffins are
" found in great numbers, and become a very
" valuable acquiſition to the natives of the
" place. The old ones (I am now ſpeaking
" of the Manks puffin) early in the morning,
" at break of day, leave their neſts and young,
" and even the iſland, nor do they return till
" night-fall. All this time they are diligently
" employed in fiſhing for their young; ſo that
" their retreats on land, which in the morning
" were loud and clamourous, are now ſtill and
" quiet, with not a wing ſtirring till the ap-
" proach of duſk, when their ſcreams once

" more announce their return. Whatever " fiſh, or other food, they have procured in " the day, by night begins to ſuffer a kind of " half digeſtion, and is reduced to an oily " matter, which is ejected from the ſtomach " of the old ones into the mouth of the young. " By this they are nouriſhed, and become fat " to an amazing degree. When they are ar- " rived to their full growth, they who are en- " truſted by the lord of the iſland, draw them " from their holes; and, that they may more " readily keep an account of the number they " take, cut off one foot as a token. Their " fleſh is ſaid to be exceſſively rank, as they " feed upon fiſh, eſpecially ſprats and ſea-weed; " however, when they are pickled and pre- " ſerved with ſpices, they are admired by thoſe " who are fond of high eating. We are told, " that formerly their fleſh was allowed by the " church on Lenten days. They were, at that " time, alſo taken by ferrets, as we do rabbits. " At preſent, they are either dug out, or drawn " out, from their burrows, with an hooked " ſtick. They bite extremely hard, and keep " ſo faſt hold of whatſoever they ſeize upon, as " not to be eaſily diſengaged. Their noiſe " when taken is very diſagreeable, being like

" the

" the efforts of a dumb perſon attempting to
" ſpeak.

" The conſtant depredation, which theſe
" birds annually ſuffer, does not in the leaſt
" ſeem to intimidate them, or drive them away:
" on the contrary, the people ſay, the neſt
" muſt be robbed, or the old ones will breed
" there no longer. All birds of this kind lay
" but one egg; yet if that be taken away,
" they will lay another, and ſo on to a third:
" which ſeems to imply, that robbing their
" neſts does not much intimidate them from
" laying again. Thoſe, however whoſe neſts
" have been thus deſtroyed, are often too late
" in bringing up their young; who, if they be
" not fledged and prepared for migration when
" all the reſt depart, are left at land to ſhift for
" themſelves. In Auguſt the whole tribe is
" ſeen to take leave of their ſummer reſidence;
" nor are they obſerved any more till the return
" of the enſuing ſpring. It is probable that
" they ſail away to more ſouthern regions, as
" our mariners frequently ſee myriads of water-
" fowl upon their return, and ſteering uſually
" to the north. Indeed, the coldeſt countries
" ſeem to be their moſt favoured retreats; and
" the number of water-fowl is much greater in
" thoſe

" thoſe colder climates, than in the warmer re-
" gions near the line. The quantity of oil
" which abound in their bodies, ſerves as a
" defence againſt cold, and preſerves them in
" vigour againſt its ſeverity ; but the ſame pro-
" viſion of oil is rather detrimental in warm
" countries, as it turns rancid, and many of
" them die of diſorders which ariſe from its
" putrefaction. In general, however, water-
" fowl can be properly ſaid to be of no climate ;
" the element upon which they live, being
" their proper reſidence. They neceſſarily
" ſpend a few months of ſummer upon land,
" to bring up their young: but the reſt of
" their time is probably conſumed in their mi-
" grations, or near ſome unknown coaſts, where
" their proviſion of fiſh is found in the greateſt
" abundance."

There is another race, which, though in ſome manner may be conſidered as forming the ſhade between the gull and gooſe kind, yet is moſt nearly allied by its habits and manners to the former, theſe may be diſtinguiſhed from all others by the bill, which is round, hooked at the point, and toothed, both upper and under chap, like a ſaw; and the circumſtances by which they may be ſaid to unite the two ge-

nuſes

nuſes are, they have round bills like the one, and unembarraſſed legs like the other. In the ſhape of the head, neck, and body, they reſemble them both.

The largeſt of this kind is the *gooſeander*, which weighs about four pounds. The bill is red; the head very full of feathers on the top and back part. The plumage is various and beautiful. The head and upper parts are fine gloſſy black, the rump and tail aſh-colour, and the under parts of the neck and body a fine pale yellow. Its manners and appetites entirely reſemble thoſe of the diver. It feeds upon fiſh, for which it dives; it is ſaid to build its neſt upon trees, like the cormorant.

The *dun diver* is leſs than the gooſeander. The upper part of the head is reddiſh brown; the back and wings aſh-colour, and the lower part of the body white. It is found in the ſame places, and has the ſame manners with the gooſeander. The *Red breaſted Merganſer* is ſtill ſmaller, weighing only two pounds. The head and neck are black, gloſſed with green, the reſt of the neck and the belly white; the upper part of the back is gloſſy black; the lower parts and the rump are ſtriated with brown and pale grey; on the wings there are white

white bars tipped with black, and the breaſt is reddiſh, mixed with black and white. The plumage of the female is leſs ſplendid; and they differ in another reſpect, viz. that the male has a very full and large creſt, the female only the rudiment of one.

The *hooded Merganſer* is a native of North America. It is about the ſize of a wigeon. The head and neck are dark brown, the former ſurrounded with a large round creſt, the middle of which is white. The back and quills are black, the tail duſky; and the breaſt and belly white, undulated with black. The female is fainter in the colour of her plumage, and has a ſmaller creſt.

The *Smew* meaſures from the end of the bill to the end of the tail near eighteen inches, and from the extremity of each wing when extended, upwards of two feet, and weighs about a pound and a half. It has a fine creſt upon the head, which falls down towards the back part of it, under which, on each ſide of the head, is a black ſpot; the reſt of the head and the neck are white, as is the under parts of the body; the back and the wings are of an agreeable mixture of black and white. The tail is about three inches long, of a ſort of duſky aſh-colour,

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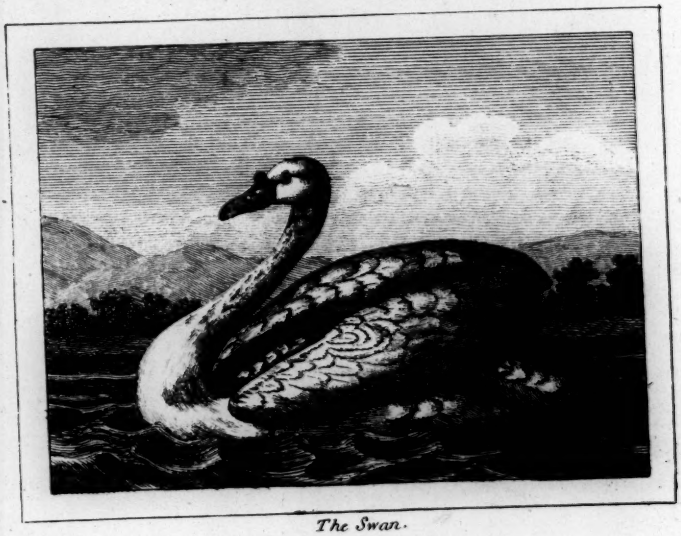
The Bernacle.



The Swan.

colour, the feathers on each ſide ſhortening gradually. The bill is of a lead colour, at the extremity of which is a dirty coloured ſpot of white; it is ſomething leſs than the generality of the duck kind, a little hooked with large open noſtrils; and darkiſh coloured eyes; the legs are pretty much of the ſame colour of the bill.

The female of this bird has no creſt; the ſides of the head are red, the throat white, the wings of a duſky aſh-colour; in other reſpects it agrees with the male. They feed on fiſh, but are very rarely ſeen in England, except in very hard ſeaſons, and then not more than three or four of them together.

OF THE GOOSE, OR DUCK KIND.

THIS genus comprehends above one hundred ſpecies, conſiderably differing in ſize or plumage from each other; many of them have been rendered domeſtic, but a ſtill greater

proportion remain in their native untamed ſtate. The whole of them are diſtinguiſhable by a ſtrong flat bill, furniſhed at the end with an additional piece, termed a nail, and marked at the end with laminæ or teeth. The ſwan, the gooſe, and the duck, are leaders of that numerous, uſeful, and beautiful tribe of birds, we have reclaimed from a ſtate of nature, and have taught to live in dependence about us. From their univerſality we might diſpenſe with a deſcription, but though nothing be ſo eaſy as to diſtinguiſh theſe in general from each other, yet the largeſt of the duck-kind approach the gooſe ſo nearly, that it may be proper to mark the diſtinctions, which have been thus correctly given:

"The diſtinctive marks of the gooſe are, a "bigger body, larger wings, a longer neck, "a white ring about the rump, a bill thicker "at the baſe, more ſlender towards the tip, "with ſhorter legs, placed more forward on "the body. They both have a waddling "walk; but the duck, from the poſition of "its legs, has it in a greater degree." By theſe marks, theſe ſimilar tribes may be known aſunder; and though the duck ſhould be found to equal the gooſe in ſize, which ſometimes happens,

happens, they will be ſtill found ſufficient to diſtinguiſh them.

In many particulars, however, they are perfectly ſimilar, and have a nearer affinity to each other than the neighbouring kinds in any other department. Their having been tamed has produced alterations in each, by which they differ as much from the wild ones of their reſpective kinds as they do among themſelves. There is nearly as much difference between the wild and the tame duck as between ſome ſorts of the duck and the gooſe: but ſtill the characteriſtics of the kind are ſtrongly marked and obvious; and therefore they can never be miſtaken.

"The bill is the firſt great obvious diſtinc-
"tion of the gooſe kind from all the feathered
"tribe. In other birds it is round and wedge-
"like, or crooked at the end. In all the
"gooſe kind it is flat and broad, made for the
"purpoſes of ſkimming ponds and lakes of the
"mantling weeds that ſtand on the ſurface.
"The bills of other birds are made of an
"horny ſubſtance throughout; theſe have their
"inoffenſive bills ſheathed with a ſkin which
"covers them all over. The bill of every
"other bird ſeems formed for piercing or tear-

" ing; theirs are only fitted for ſhovelling up " their food, which is chiefly of the vegetable " kind.

" Though theſe birds do not reject animal " food when offered them, yet they can con- " tentedly ſubſiſt upon vegetables, and ſeldom " ſeek any other. They are eaſily provided " for; wherever there is water, there ſeems " to be plenty. All the other web-footed " tribes are continually voracious, continually " preying. Theſe lead more harmleſs lives: " the weeds on the ſurface of the water, or " the inſects at the bottom, the graſs by the " bank, or the fruits and corn in cultivated " grounds, are ſufficient to ſatisfy their eaſy " appetites: yet theſe, like moſt other animals, " will not reject fleſh, if properly prepared " for them; it is ſufficient praiſe to them that " they do not eagerly purſue it.

" As their food is chiefly vegetables, ſo " their fecundity is in proportion. We have " had frequent opportunities to obſerve, that " all the predatory tribes, whether of birds or " quadrupeds, are barren or unfruitful. We " have ſeen the lion with its two cubs; the " eagle with the ſame number; and the pen- " guin with even but one. Nature that has ſup-

" plied

" plied them with powers of deſtruction, has " denied them fertility. But it is otherwiſe " with theſe harmleſs animals I am deſcrib- " ing. They ſeem formed to fill up the " chaſms in animated nature, cauſed by the " voraciouſneſs of others. They breed in great " abundance, and lead their young to the pool " the inſtant they are excluded."

As their food is ſimple, ſo their fleſh is nouriſhing and wholeſome. The ſwan was conſidered as a high delicacy among the ancients; and the gooſe was abſtained from as totally indigeſtible. In modern times, at leaſt in Europe, the taſte for theſe birds has become quite reverſed; the gooſe is now become the favourite; and the ſwan is ſeldom brought to table unleſs for the purpoſes of oſtentation. But at all times the fleſh of the duck was in high eſteem; the ancients thought even more highly of it than we do; for we are contented to eat it as a delicacy, but they conſidered it as a medicine alſo; and Plutarch aſſures us, that Cato kept his whole family in health, by feeding them with duck whenever they threatened to be out of order.

The qualities poſſeſſed by this tribe of great fecundity, eaſy ſuſtenance, and wholeſome nouriſhment,

riſhment, have been found of ſo conſiderable advantage to man, as to induce him to take theſe birds from a ſtate of nature and render them domeſtic; and in which he has been eminently ſucceſsful. How long they have been thus dependents upon his pleaſure is not known; for from the earlieſt accounts, they were conſidered as familiars about them. The time muſt have been very remote; for there have been many changes wrought in their colours, their figures, and even their internal parts, by human cultivation. The different kinds of theſe birds, in a wild ſtate are ſimple in their colouring:— for as a modern author obſerves, "when one "has ſeen a wild gooſe, a deſcription of its "plumage will, to a feather, exactly correſ- "pond with that of any other.—But in the "tame kinds no two of any ſpecies are exact- "ly alike. Different in their ſize, their co- "lours, and frequently in their general form. "They ſeem the mere creatures of art; and, "having been ſo long dependent upon man for "ſupport, they ſeem to aſſume forms entirely "ſuited to his neceſſities.

THE SWAN.

SO much difference is there between this bird when on land and in the water, that it is hardly to be ſuppoſed the ſame, for in the latter no one can poſſibly exceed it for beauty and grandeur. When it aſcends from its favourite element, its motions are aukward, and its neck is ſtretched forward with an air of ſtupidity; but when ſeen ſmoothly ſailing along the water, commanding a thouſand graceful attitudes, moving at pleaſure without the ſmalleſt effort, when it "proudly rows its ſtate," as Milton has it, "with arched neck, between its white "wings mantling," there is not a more beautiful figure in all Nature. In the exhibition of its form, there are no broken or harſh lines; no conſtrained or catching motions; but the roundeſt contours, and the eaſieſt tranſitions; the eye wanders over every part with inſatiable pleaſure,

pleaſure, and every part takes a new grace with new motion.

This bird has long been rendered domeſtic; and it is now a doubt whether there be any of the tame kind in a ſtate of nature. The wild ſwan, as it is called, though ſo ſtrongly reſembling this in colour and form, is yet a different bird; for it is very differently formed within; and it is at leaſt one fourth leſs than the tame one; the latter generally weighs full twenty pounds, while the other never exceeds ſixteen. The colour of the tame ſwan is entirely white; that of the wild bird, along the back and the tips of the wings, of an aſh-colour. But theſe are ſlight differences, compared to what are found upon diſſection. In the tame ſwan, the windpipe ſinks down into the lungs in the ordinary manner; but in the wild, after a ſtrange and wonderful contortion, like what we have ſeen in the crane, it enters through a hole formed in the breaſt-bone; and being reflected therein, returns by the ſame aperture; and being contracted into a narrow compaſs by a broad and bony cartilage, it is divided into two branches, which, before they enter the lungs, are dilated and as it were ſwollen out into two cavities.

"Such

"Such, ſays Buffon, is the extraordinary dif-
" ference between theſe two animals, which
" externally ſeem to be of one ſpecies. Whe-
" ther it is in the power of long continued
" captivity and domeſtication to produce this
" ſtrange variety between birds otherwiſe the
" ſame, I will not take upon me to determine.
" But certain it is, that our tame ſwan is no
" where to be found, at leaſt in Europe, in a
" ſtate of nature."

As it is not eaſy to account for this difference of conformation, ſo it is ſtill more difficult to reconcile the accounts of the ancients with the experience of the moderns, concerning the vocal powers of this bird. The tame ſwan is one of the moſt ſilent of all birds; and the wild one has a note extremely loud and diſagreeable. It is probable, the convolutions of the windpipe may contribute to increaſe the clangor of it; for ſuch is the harſhneſs of its voice, that the bird from thence has been called *the Hooper*. In neither is there the ſmalleſt degree of melody; nor have they, for above this century, been ſaid to give ſpecimens of the ſmalleſt muſical abilities: yet, notwithſtanding this, it was the general opinion of antiquity, that the ſwan was a moſt melodious

bird; and that, even to its death, its voice went on improving. From the ancient and collected accounts by Aldrovandus, and the Abbe Gedoyn it appears, that while Plato, Ariſtotle, and Diodorous Siculus, believed the vocality of the ſwan, Pliny and Virgil ſeem to doubt that received opinion. In this equipoiſe of authority, Aldrovandus appears to determine in favour of the Greek philoſophers; and the form of the windpipe in the wild ſwan, ſo much reſembling a muſical inſtrument, inclined his belief ſtill more ſtrongly. In aid of this alſo, came the teſtimony of Pendaſius, who affirmed, than he had often heard ſwans ſweetly ſinging in the lake of Mantua, as he was rowed up and down in a boat; as alſo of Olaus Wormius, who profeſſed that many of his friends and ſcholars had heard them ſinging. "There was," ſays he, "in my family, a very "honeſt young man, John Reſtorph, a ſtu-"dent in divinity, and a Norwegian by nation. "This man did, upon his credit, and with the "interpoſition of an oath, ſolemnly affirm that "once, in the territory of Dronten, as he was "ſtanding on the ſea ſhore, early in the morn-"ing, he heard an unuſual and ſweet murmur, "compoſed of moſt pleaſant whiſtlings and "ſounds;

" ſounds; he knew not at firſt whence they " came, or how they were made, for he ſaw " no man near to produce them; but looking " round about him, and climbing to the top " of a certain promontory, he there eſpied an " infinite number of ſwans gathered together " in a bay, and making the moſt delightful " harmony: a ſweeter in all his life-time he " had never heard." Theſe were accounts ſufficient at leaſt to keep opinion in ſuſpenſe, though in contradiction to our own experience; but Aldrovandus, to put, as he ſuppoſed, the queſtion paſt all doubt, gives the teſtimony of a countryman of our own, from whom he had the relation. This man's name was Mr. George Braun, who aſſured him, that nothing was more common in England, than to hear ſwans ſing; that they were bred in great numbers in the ſea, near London; and that every fleet of ſhips that returned from their voyages from diſtant countries, were met by ſwans, that came joyfully out to welcome their return, and ſalute them with a loud and cheerful ſinging! " It " was in this manner (it has been feelingly " ejaculated) that Aldrovandus, that great and " good man, was frequently impoſed upon by " the deſigning and the needy: his unbound-

" ed curioſity drew round him people of every " kind, and his generoſity was as ready to " reward falſehood as truth---Poor Aldrovan- " dus! after having ſpent a vaſt fortune, for " the purpoſes of enlightening mankind; " after having collected more truth and more " falſehood than any man ever did before him, " he little thought of being reduced at laſt to " want bread, to feel the ingratitude of his " country, and to die a beggar in a public hoſ- " pital!"

From all which we may fairly infer that our modern authorities, in favour of the ſinging of ſwans, are more ſuſpicious than concluſive, ſince they are reduced to this Mr. George Braun, and John Reſtorph, the native of a country remarkable for ignorance and credulity. The original conceit of the ſwan's ſinging before its death, ſeems to have taken its riſe from the fable that the ſoul of Orpheus was tranſmigrated into a ſwan, from whence the Greeks and Egyptians have held that bird in great veneration; whether it be from that circumſtance or not, it is moſt probable the ancients had ſome mythological meaning in aſcribing melody to the ſwan, but as for the moderns, their teſtimony is too doubtful and their intentions too vague to deſerve

deſerve our regard. The ſwan, therefore, muſt be content with that ſhare of fame which it poſſeſſes on the ſcore of its beauty; ſince the melody of its voice, without better teſtimony, will ſcarcely be admitted by even the credulous.

This beautiful bird is as delicate in its appetites, as elegant in its form. Its chief food is corn, bread, herbs growing in the water, and roots and ſeeds, which are found near the margin. At the time of incubation it prepares a neſt in ſome retired part of the bank, and chiefly where there is an iſlet in the ſtream. This is compoſed of water-plants, long graſs and ſticks; and the male and female aſſiſt in forming it with great aſſiduity. The ſwan lays ſeven or eight eggs, white, much larger than thoſe of a gooſe, with a hard, and ſometimes a tuberous ſhell. It ſits near two months before its young are excluded; which are aſh-coloured when they firſt leave the ſhell, and for ſome months after. It is not a little dangerous to approach the old ones, when their little family are feeding round them. Their fears, as well as their pride, ſeem to take the alarm; and they have ſometimes been known to give a blow with

their pinion, that has broken a man's leg or arm.

It is not till they are a twelve-month old that the young ſwans change their colour with their plumage. All the ſtages of this bird's approach to maturity are ſlow, and ſeem to mark its longevity. It is two months hatching; a year in growing to its proper ſize; and if, according to the obſervations of Pliny, Buffon, and other naturaliſts, that thoſe animals which are longeſt in the womb are the longeſt lived, the ſwan muſt exceed in length of years every other, for it is the longeſt in the ſhell of any bird we know, and indeed has been long remarkable for its longevity. Some ſay that it lives three hundred years; and Willoughby, who is in general diffident enough, ſeems to believe the report. A gooſe, as he juſtly obſerves, has been known to live an hundred; and the ſwan, from its ſuperior ſize, and from its harder, and firmer fleſh, may naturally be ſuppoſed to live ſtill longer.

"Swans were formerly held in ſuch great "eſteem in England, that, by an act of Ed-"ward the Fourth, none, except the ſon of "the king, was permitted to keep a ſwan, un-"leſs poſſeſſed of five marks a year. By a ſub-

"ſequent

" ſequent act, the puniſhment for taking their " eggs was impriſonment for a year and a day, " and a fine at the king's will. At preſent they " are but little valued for the delicacy of their " fleſh; but many are ſtill preſerved for their " beauty. We ſee multitudes on the Thames " and Trent; but no where greater numbers " than on the ſalt water inlet of the ſea near " Abbotſberry, in Dorſetſhire."

As we have already ſtated, the wild ſwan is generally remarked to be of one uniform colour, and much inferior in ſize to the tame one, and yet ſome travellers have given a very different account of birds of this ſpecies; in particular Sir Richard Hawkins, in his voyage to the South Sea, ſays, they obſerved abundance of fowls as large and as big as ſwans, that came hovering about their ſhip, and as the wind calmed, ſettled themſelves in the ſea, and fed upon the ſweepings of the ſhip. " Being therefore, ſays he, deſirous to ſee what they were, we threw out a line and hook, which one of theſe ravenous fowls preſently ſeized, but ſwallowing the bait was himſelf taken, but the men that went to lay hold of him were ſoundly paid for their attempt; for the bird laid on ſo faſt and ſo hard upon their fingers, that they both let

let go their hold, and came off ſhewing their hands both black and blue. After this manner they fiſhed up ſeveral others, but were forced to faſten a cord about their neck, and ſo drew them up into the ſhip; for they were too fierce and furious to be handled. They proved very good meat, tender, and of kindly nouriſhment, they were of two colours, ſome white, and others grey; their beaks were more crooked than thoſe of falcons; in each wing they had three joints, and both wings being extended to their full ſtretch, from the extremity of one to that of the other was more than two fathoms."

The *Cygnus*, or wild Swan, is however much leſs than the tame kind; it has a black bill, yellow wax, and white body; and has a whiſtling note: they inhabit the northern world, from the deſarts of Iceland to the ſoft climates of Greece. They ſwarm in the lakes and marſhes of Siberia, from whence they ſpread beyond Kamtſcatka, probably to the coaſts of America.---They breed in great numbers on the ſhores of Hudſon's Bay; and in Louiſiana the Indians ſew the ſkins of theſe birds together for a covering, retaining the down on them:---the large feathers form diadems for their chiefs, and the leſſer ones are wove into ornaments for females

of

of the higher rank; and the ſkin of the legs, taken off whole, is uſed for purſes, and has ſome reſemblance to ſhagreen.

Linnæus ſays, that wild ſwans frequently viſit Sweden after a thaw, and are caught with apples, in which a hook is concealed. In hard winters this bird viſits our coaſts, in large flocks, but is not known to breed in Great Britain. Towards October they appear in great numbers among the Weſtern Iſles of Scotland, from whence they take their departure early in ſpring, returning northward to breed.—Hence, in thoſe parts they become the countryman's almanack; their arrival denoting the approach of winter, as their departure preſages the return of ſpring.

By the inward formation of its windpipe, it becomes enabled to utter its *whoogh, whoogh*, in a very loud and ſhrill, though not diſagreeable manner, eſpecially when heard above one's head, and modulated by the wind. The Icelanders compare it to the notes of a violin; but every ſound muſt be pleaſing which predicts a termination to their long and uncomfortable winter, and announces a return of the ſummer's genial influence.

Of other peculiarities, it muſt be noticed, that the wild ſwan has twelve ribs on each ſide, the tame or mute only eleven; the former carries its neck quite erect; the latter always ſwims with its arched.

It is from the whiſtling ſwan that the ancients have drawn their metaphors for melody; for the tame bird is never ſeen on any of thoſe ſtreams celebrated by the Latin bards; and it was but in metaphor that any powers of muſic were applied to them; for Virgil, when ſpeaking of theſe birds as a naturaliſt, gives them their real note.

"Dant ſonitum *rauci* per ſtagna loquacia Cygni."

The *tame* or *mute Swan* is diſtinguiſhed from the former by the ſuperiority of its ſize, and by the redneſs of its bill, though the tip and ſides are black, as well as the ſkin between the eyes and bill. A black callous knob projects over the baſe of the upper mandible. Till the ſecond year of their age, the plumage of theſe birds is aſh-colour, but it afterwards changes to a gloſſy whiteneſs. The ſwan begins laying in February, and continues every other day till ſhe has depoſited ſeven or eight eggs, generally on a bed of graſs near the water, where ſhe ſits ſix weeks.

In

In the Northern parts of Europe, particularly in Siberia, where they abound, ſwans become very large, and are much eſteemed for the table; and in our own country, in thoſe days when the elegance of the table was eſtimated by the ſize, as much as the number of good diſhes, they made a part of every grand feſtival. They have loſt their ancient eſteem among epicureans, but are ſtill preſerved for their beauty; as no bird has the command of ſuch elegant attitudes on the water.

When the Swan was an object of luxury, every effort was uſed to confine it to the tables of the rich and great, by penal laws, as abſurd and as unjuſtifiable in the eye of equity or common ſenſe, as ſome ſimilar ones of modern date; but by an alteration of taſte, the gooſe has baniſhed the ſwan from our tables, unleſs for the purpoſe of oſtentation; for cygnets are frequently fattened at Norwich about Chriſtmas, and ſold for a guinea or upwards a piece.

The *Cygnoides*, as forming a middle line between the ſwan and the gooſe, has been not improperly ſtiled the ſwan-gooſe. This ſpecies is the ſwan-gooſe of Ray, from Guinea, and is alſo often called the Muſcovy gooſe. They are frequent in Britain, and unite ſo readily with

the common gooſe, that their offspring will produce as certainly as if no ſuch intermixture had taken place. They walk very erect, with the head much elevated; make an extraordinary harſh ſcreaming noiſe, which they continue almoſt the whole day through, and without the leaſt provocation or diſturbance.

The *Grey-lag*, or wild gooſe has a large, elevated bill, of a fleſh colour, tinged with yellow; the head and neck aſh-coloured: the breaſt and belly whitiſh, clouded with grey, as is alſo the back; and the legs of a fleſh-colour. This ſpecies breeds and hatches in the fens, producing eight or nine young ones at a time, where they make their reſidence the whole year in this country; but on the continent they are migratory, and change their place in very large flocks. They ſeem to be a general inhabitant of the globe. They are eaſily tamed;---but at the table are deemed ſuperior to the domeſtic gooſe.

The *tame Gooſe* is merely the former, with ſome trifling varieties in colour, chiefly owing perhaps to its ſtate of domeſtication.---It is ſometimes found white, though much more frequently verging towards the grey; and it is a diſpute among men of taſte which ſhould have the preference.

In

In general, geeſe breed but once in a year, ſit about thirty days, and will rear ſeven; though if well fed they will produce eggs ſufficient for three broods. Their longevity is very great; authors of reſpectability ſay, that it extends to no leſs than an hundred years. In rural economy they are an object of attention and profit; and in the fens of Lincolnſhire they are reared in ſuch multitudes, that many perſons at the end of the breeding ſeaſon will be poſſeſſed of between ſeven and eight thouſand geeſe; vaſt numbers of which are annually driven to market with a proper proportion of ſuperannuated geeſe and ganders, that in conſequence of repeated pluckings, prove remarkably tough and dry.

A gooſe well fed in the common way, will weigh fifteen or ſixteen pounds, but by the unnatural practice of cramming, may be increaſed to almoſt double that weight.

The creatures ſet apart for this beaſtly and unwholeſome gorge, are nailed to the floor by the webs of their feet to keep them in a ſtate of perfect inaction; and then ſtuffed with bean-meal and other fattening diet; but French refinement has increaſed the barbarity, by putting out the eyes of the wretched animal.

Another

Another operation is practiſed on theſe birds, which avarice can only palliate, and at which humanity muſt bluſh:---five times in a year they are totally ſtripped of their natural covering; the firſt time is at Lady-day, for feathers and quills; and the ſame is renewed for feathers only, between that time and Michaelmas.---Should the ſeaſon prove cold, vaſt numbers die by this ſavage practice; to which the young ones eſpecially yield with all the tokens of anguiſh and torment.

The *Bean Gooſe* is chiefly diſtinguiſhed from the former by the reſemblance of the nail of its bill to a horſe-bean. The head and neck are of an aſh brown, tinged with ferruginous; breaſt and belly dirty white; back, a plain aſh-colour, feet and legs ſaffron, and claws black. They appear in the fens of Lincolnſhire in autumn, from whence they migrate in May to the wild parts of Europe. While in this country they feed much on green wheat.

The *Barnacle* appears in great flocks during winter on the north-weſt coaſts of this kingdom, which they quit in February, and retire northward even as far as Spitzbergen to breed. The bill of this bird is black, as is alſo the legs and tail; the hind part of the head, the neck

neck, and upper part of the breaſt and back, are of a deep black; the reſt white. About 200 years ago they received the name of *tree geeſe*, from an abſurd notion that they were generated out of wood, or rather a ſpecies of ſhell that is found ſticking to the bottom and fragments of ſhips. They are eaſily made tame, and are very long lived. Linnæas joins this bird with the laughing-gooſe of Edwards, of which he ſays it is the male. This latter is generally of a dirty white, marked with large ſpots of black, and the legs yellow; viſiting England in the ſame manner as the reſt of this migratory genus.

The *Race-horſe*, or *Logger-head-gooſe*, is a large bird, weighing from twenty to thirty pounds; the bill is of an orange colour; the head, neck, and upper parts of the body of a deep aſh-colour; the thighs inclining to blue; the quills and tail black, on the bend of the wings, is a yellow knob, half an inch in length. They are unable to fly, from the ſhortneſs of their wings, but make amazing progreſs on the water; their fleſh is very rank and unſavory. They chiefly inhabit the Falkland Iſles, Staten Land, &c. and moſtly are ſeen in pairs.

The

The *Snow Goose* is a handſome bird, but the moſt ſtupid even of the gooſe race; and in many parts of Siberia ſuffer themſelves to be taken in the moſt ridiculous manner. The general colour of the plumage is ſnow white, except the firſt ten quills, which are black with white ſhafts; the legs of a deep red; the upper mandible of the bill ſcarlet, the under white. But the young are of a blue colour during the firſt year.

They are found plentifully in the ſpring months about Hudſon's Bay, but go further northward to breed. The Americans about Carolina take them in vaſt numbers; and after plucking them, and taking out the entrails, they depoſit the bodies in holes dug in the earth, with which they are covered, and by the influence of the froſt kept perfectly ſweet during the winter. In ſome parts they are decoyed into huts or hovels, by a perſon diſguiſed in the ſkin of a white rein deer, whom they ſtupidly miſtake for their leader, and are thus killed by hundreds at a time.

Another ſpecies of the gooſe is taken in great numbers in Siberia, called the great gooſe, weighing from twenty-five to fifty pounds Ruſſia. The bill is black, the body duſky, and the legs ſcarlet.

The

The *Red-breaſted Gooſe* is one of the moſt elegant of the race, though little known here; its reſidence being chiefly confined to the coaſts of the Icy ſea; they generally weigh about three pounds, are quite free from any fiſhy taſte, and therefore highly eſteemed for the table.

The *Ruddy Gooſe* is about the ſize of a mallard, and found in Ruſſia and Siberia, from whence it migrates into India; its bill is black; the neck of an iron colour, encircled with a collar of black; the reſt of the body an obſcure or duſky red, except the tail, which is a greeniſh black. They frequently lay in hollow trees, and the male and female ſit by turns; but all attempts to domeſticate them have proved ineffectual. Their voice is not unlike the note of a clarinet. Their attachments are ſo very ſtrong, that if the male is killed, the female will not quit the gunner till ſhe has been two or three times ſhot at.

The ſmall *Barnacle* frequents our coaſts, as well as thoſe of Holland and Ireland in winter: they are of a brown colour, with the head, neck, and breaſt black, and a white collar. They are eaſily tamed, and when fatted are thought to be delicate food. In ſome ſeaſons

they have been known to reſort to the coaſts of France in ſuch numbers as to become a peſt; and in the winter of 1740, they deſtroyed all the corn near the ſea coaſts, by tearing it up by the roots: a general war was declared againſt them, and though thouſands were knocked on the head, it availed but little; nor were the inhabitants releaſed from this ſcourge, till the north wind which brought them, ceaſed to blow, when they took their leave.

The *Canadenſis* is a large brown gooſe, with a black neck and head, found in various parts of North America. At Hudſon's Bay they are one of the chief articles of food; they are killed every year to the amount of three or four thouſand, then ſalted and barrelled. The month of their appearance is called by the Indians *gooſe-moon*, and they are eſteemed the harbingers of ſpring. In a favourable day, an Indian will kill 200 of them. On their return to the ſouth alſo, great havoc is made among them by the Indians, who preſerve them in the ground, as we have mentioned above. The fleſh of the young birds is accounted good; and their feathers are an article of commerce, much in favour of thoſe places where they breed plentifully. This ſpecies is much eſteemed, as well

in

in England, as in many parts of the Continent, as an ornament to pieces of water :—on the lakes of Verſailles and Chantilly, numbers of them were common, mixing with the ſwans very freely ; they eaſily become familiar, and encreaſe pretty faſt.

Theſe, and many other varieties, are found in this kind ; which agree in one common character of feeding upon vegetables, and being remarkable for their fecundity. Of theſe, however, the tame gooſe is the moſt fruitful. Having leſs to fear from its enemies, leading a ſecurer and a more plentiful life, its prolific powers increaſe in proportion to its eaſe ; and though the wild gooſe ſeldom lays above eight eggs, the tame gooſe is often ſeen to lay above twenty. The female hatches her eggs with great aſſiduity ; while the gander viſits her twice or thrice a day, and ſometimes drives her off to take her place, where he ſits with great ſtate and compoſure.

But beyond that of all animals is his pride when the young are excluded : he ſeems then to conſider himſelf as a champion not only obliged to defend his young, but alſo to keep off the ſuſpicion of danger ; he purſues dogs and men that never attempt to moleſt him ; and,

though the moſt harmleſs thing alive, is then the moſt petulent and provoking. When in this manner, he has purſued the calf or the maſtiff, to whoſe content alone he is indebted for ſafety, he returns to his female and her brood in triumph, clapping his wings, ſcreaming, and ſhewing all the marks of conſcious ſuperiority.

A young gooſe is generally reckoned very good eating; yet the feathers of this bird ſtill farther increaſe its value. Of gooſe feathers moſt of our beds in Europe are compoſed; in the countries bordering on the Levant, and in all Aſia, the uſe of them are utterly unknown. They there uſe mattraſſes, ſtuffed with wool, or camel's hair, or cotton; and the warmth of their climate may perhaps make them diſpenſe with cuſhions of a ſofter kind. But how it happens that the ancients had not the uſe of feather beds is ſurpriſing: Pliny tells us, indeed that they made bolſters of feathers to lay their heads on; and this ſerves as a proof that they turned feathers to no other uſes.

The feathers of Somerſetſhire are moſt in eſteem; thoſe of Ireland are reckoned the worſt. Hudſon's Bay alſo furniſhes very fine feathers, ſuppoſed to be of the gooſe kind.

The

The down of the ſwan is brought from Dantzic. The ſame place alſo ſends us great quantities of the feathers of the cock and hen; but Greenland, Iceland, and Norway, furniſh the beſt feathers of all: and in this number we may reckon the Eider-down of which we ſhall take notice in its place. The beſt method of curing feathers, is to lay them in a room in an open expoſure to the ſun, and, when dried, to put them into bags, and beat them well with poles to get the duſt off. But, after all, nothing will prevent for a time, the heavy ſmell which ariſes from the putrefaction of the oil contained in every feather; no expoſure will draw this off, how long ſoever it be continued; they muſt be lain upon, which is the only remedy: and, for this reaſon, old feathers are much more valuable than new.

THE DUCK, AND ITS VARIETIES.

IT has been univerſally admitted by all naturaliſts, that the tame duck is the moſt eaſily reared of all our domeſtic animals. The very inſtinct of the young ones direct them to their favourite element; and though they are conducted by a hen, yet they deſpiſe the admonition of their leader.

This ſerves as an inconteſtible proof that all birds have their manners rather from nature than education. A falcon purſues the partridge, not becauſe it is taught by the old one, but becauſe its appetites make their importunate call for animal food: the cuckoo follows a very different trade from that which its nurſe endeavoured to teach it: animals of the duck kind alſo follow their appetites, not their tutor, and come to all their various perfections without any guide. All the arts poſſeſſed by man, are

are the reſult of accumulated experience ; all the arts of inferior animals are ſelf-taught, and ſcarce one acquired by imitation.

It is uſual to lay duck eggs under a hen, becauſe ſhe hatches them better than the original parent would have done. " The duck ſeems " to be a heedleſs, inattentive mother ; ſhe " frequently leaves her eggs till they ſpoil, and " even ſeems to forget that ſhe is entruſted " with the charge : ſhe is equally regardleſs of " them when excluded ; ſhe leads them to the " pond, and thinks ſhe has ſufficiently provid- " ed for her offspring when ſhe has ſhewn " them the water. Whatever advantages may " be procured by coming near the houſe, or at- " tending in the yard, ſhe declines them all ; " and often lets the vermin, who haunt the " waters deſtroy them, rather than take ſhelter " nearer home. The hen is a nurſe of a very " oppoſite character ; ſhe broods with the ut- " moſt aſſiduity, and generally brings forth a " young one from every egg committed to her " charge ; ſhe does not lead them to the water " indeed, but ſhe carefully guards them when " there by ſtanding at the brink. Should the " rat or the weazle, attempt to ſeize them, " the hen inſtantly gives them protection ; ſhe

" leads

" leads them to the houſe when tired with " paddling, and rears up the ſuppoſitious brood, " without ever ſuſpecting that they belong to " another."

The *wild duck* differs in many reſpects, from the tame; and in them there is ſtill greater variety than among the domeſtic kinds. Of the tame duck there are not more than ten different ſorts; and of the wild, Briſſon reckons above twenty. The moſt obvious diſtinction between wild and tame ducks is in the colour of their feet; thoſe of the tame duck being black, thoſe of the wild duck yellow. The difference between wild ducks among each other, ariſes as well from the ſize as the nature of the place they feed in. Sea-ducks, which feed in the ſalt water, and dive much, have a broad bill, bending upwards, a large hind toe, and a long blunt tail. Pond-ducks, which feed in pluſhes, have a ſtraight and narrow bill, a ſmall hind toe, and a ſharp pointed train. The former are called, by our decoy-men, *foreign ducks*; the latter are ſuppoſed to be natives of England. In this tribe, we may rank, as natives of Europe, the Eider Duck, which is double the ſize of a common duck, with a black bill; the Velvet Duck, not ſo large,

and

and with a yellow bill; the Scoter, with a knob at the baſe of a yellow bill; the Tufted Duck, adorned with a thick creſt; the Scaup Duck, leſs than the common duck, with the bill of a greyiſh blue colour; the Golden Eye, with a large white ſpot at the corners of the mouth, reſembling an eye; the Sheldrake, with the bill of a bright red, and ſwelling into a knob; the Mallard, which ſome have ſuppoſed to be the ſtock from whence our tame breed has probably been produced; the Pintail, with the two middle feathers of the tail three inches longer than the reſt; the Pochard, with the head and neck of a bright boy; the Widgeon, with a lead-coloured bill, and the plumage of the back marked with narrow black and white undulated lines, but beſt known by its whiſtling ſound: laſtly, the Teal, which is the ſmalleſt of this kind, with the bill black, the head and upper part of the neck of a bright bay. Theſe are the moſt common birds of the duck kind in this part of the globe; but their number and varieties in other climates are almoſt beyond conception; at the head of whoſe families may be reckoned the Muſcovy Duck, or, more properly ſpeaking, the Muſk Duck, ſo called from a ſuppoſed muſky ſmell, with naked ſkin

round the eyes, and which is a native of Africa; the Braſilian Duck, that is of the ſize of a gooſe, all over black, except the tips of the wings; and the American Wood Duck, with a variety of beautiful colours, and a plume of feathers that falls from the back of the head like a friar's cowl.

Numerous, however, as the varieties of wild ducks may be, they all purſue the ſame mode, and live in the ſame manner, keeping together in flocks in the winter, and flying in pairs in ſummer, bringing up their young by the water-ſide, and leading them to their food as ſoon as out of the ſhell. Their neſts are uſually built among heath or ruſhes, not far from the water; and they lay twelve, fourteen, or more eggs, before they ſit: yet this is not always their method, as ſome, from continually encountering danger by their ground ſituation, have ſometimes been obliged to change their manner of building; and their aukward neſts are in thoſe caſes ſeen exalted on the tops of trees. This muſt be a very great labour to perform, as the duck's bill is but ill formed for building a neſt, and giving the materials of which it is compoſed, a ſufficient ſtability to ſtand the weather. The neſt, whether high or low, is generally

compoſed

compoſed of ſingular materials. The longeſt graſs, mixed with heath, and lined within with the bird's own feathers, uſually go to the compoſition; however, in proportion as the climate is colder, the neſt is more artificially made, and more warmly lined. In the Arctic regions, nothing can exceed the great care all of this kind take to protect their eggs from the intenſeneſs of the weather. While the gull and the penguin kind ſeem to diſregard the ſevereſt cold, the duck, in thoſe regions, forms itſelf a hole to lay in, ſhelters the approach, lines it with a layer of long graſs and clay, within that another of moſs, and laſtly, a warm coat of feathers or down. The Eider duck is particularly remarkable for the warmth of its neſt; the external materials of which, are ſuch as are in common with the reſt of the kind; but the inſide lining, on which the eggs are immediately depoſited, is at once the ſofteſt, warmeſt, and the lighteſt ſubſtance with which we are acquainted, being no other than the inſide down which covers the breaſt of the bird in the breeding ſeaſon, which the female plucks off with her bill, and furniſhes the inſide of her neſt with a tapeſtry more valuable than the moſt ſkillful artiſts can produce.

As the whole of this tribe poſſeſs the faculties of flying and ſwimming, ſo they are in general birds of paſſage, and it is moſt probable perform their journies acroſs the ocean as well on the water as in the air. Thoſe that migrate to this country, on the approach of winter, are ſeldom found ſo well taſted or ſo fat as the fowls that continue with us the year round: their fleſh is often lean, and ſtill oftener fiſhy; which flavour it has probably contracted in the journey, as their food in the lakes of Lapland, from whence they deſcend, is generally of the inſect kind.

As ſoon as they arrive in this country, they are generally ſeen flying in flocks to make a ſurvey of thoſe lakes where they intend to take up their reſidence for the winter. In the choice of theſe they have two objects in view; to be near their food, and yet remote from interruption. Their chief aim is to chuſe ſome lake in the neighbourhood of a marſh where there is at the ſame time a cover of woods and where inſects are found in great abundance. Lakes, therefore, with a marſh on one ſide and a wood on the other, are ſeldom without vaſt quantities of wild fowl; and when a couple are ſeen at any time, that is a ſufficient inducement to bring

bring hundred of others. The ducks flying in the air are often lured down from their heights by the loud voice of the mallard from below. Nature ſeems to have furniſhed this bird with very particular faculties for calling. The windpipe where it begins to enter the lungs, opens in a kind of bony cavity, where the ſound is reflected as in a muſical inſtrument, and is heard a great way off. To this call all the ſtragglers reſort; and in a week or a fortnight's time, a lake that before was quite naked is black with water-fowl, that have left their Lapland retreats to keep company with our ducks who never ſtirred from home.

"They generally," it has been repeatedly re-
"marked, chuſe that part of the lake where
"they are inacceſſible to the approach of the
"fowler, in which they all appear huddled to-
"gether, extremely buſy and very loud. What
"it is can employ them all the day is not eaſy
"to gueſs. There is no food for them at the
"place where they ſit and cabal thus, as they
"chuſe the middle of the lake; and as for
"courtſhip, the ſeaſon for that is not yet come;
"ſo that it is wonderful what can ſo buſily keep
"them occupied. Not one of them ſeems a
"moment at reſt. Now purſuing one ano-
ther,

" ther, now ſcreaming, then all up at once, " then down again; the whole ſeems one " ſtrange ſcene of buſtle with nothing to do.

" They frequently go off in a more private " manner by night to feed in the adjacent mea- " dows and ditches, which they dare not ven- " ture to approach by day. In theſe nocturnal " adventures they are often taken; for though " a timorous bird, yet they are eaſily deceived " and every ſpring ſeems to ſucceed in taking " them. But the greateſt quantities are taken " in decoys; which, though well known near " London, are yet untried in the remoter parts " of the country."

The manner of making and managing a decoy is thus deſcribed. " A place is to be choſen for this purpoſe far remote from the common highway and all noiſe of people. A decoy is beſt where there is a large pond ſurrounded by a wood, and beyond that a marſhy and uncultivated country. When the place is choſen, the pool, if poſſible, is to be planted round with willows, unleſs a wood anſwers the purpoſe of ſhading it on every ſide. On the ſouth and north ſide of this pool are two, three, or four ditches or channels, made broad towards the pool, and growing narrower till they end in a point.

point. Theſe channels are to be covered over with nets, ſupported by hooped ſticks bending from one ſide to the other, ſo that they form a vault or arch growing narrower and narrower to the point, where it is terminated by a tunnel net, like that in which fiſh are caught in weirs. Along the banks of theſe channels ſo netted over, which are called pipes, many hedges are made of reeds ſlanting to the edge of the channel, the acute angles to the ſide next the pool. The whole apparatus alſo is to be hidden from the pool by a hedge of reeds along the margin, behind which the fowler manages his operations. The place being fitted in this manner, the fowler is to provide himſelf with a number of wild ducks made tame, which are called decoys. Theſe are always to be fed at the mouth or entrance of the pipe, and to be accuſtomed to come at a whiſtle.

"As ſoon as the evening is ſet in, *the decoy riſes*, as they term it, and the wild fowl feed during the night. If the evening be ſtill, the noiſe of their wings, during their flight is heard at a very great diſtance, and produces no unpleaſing ſenſation. The fowler when he finds a fit opportunity, and ſees his decoy covered with fowl, walks about the pool, and obſerves into

into what pipe the birds gathered in the pool may be enticed or driven. Then caſting hemp-ſeed, or ſome ſuch ſeed as will float on the ſurface of the water, at the entrance and up along the pipe, he whiſtles to his decoy-ducks, who inſtantly obey the ſummons, and come to the entrance of the pipe, in hopes of being fed as uſual. Thither alſo they are followed by a whole flock of wild ones, who little ſuſpect the danger preparing againſt them. Their ſenſe of ſmelling however is very exquiſite; and they would ſoon diſcover their enemy, but that the fowler always keeps a piece of turf burning at his noſe, againſt which he breathes; and this prevents the effluvia of his perſon from reaching their exquiſite ſenſes. The wild ducks, therefore, purſuing the decoy-ducks, are led into the broad mouth of the channel or pipe, nor have the leaſt ſuſpicion of the man who keeps hidden behind one of the hedges. When they have got up the pipe, however, finding it grow more and more narrow, they begin to ſuſpect danger, and would return back; but they are now prevented by the man, who ſhews himſelf at the broad end below. Thither, therefore, they dare not return; and riſe they may not, as they are kept by the net above from aſcend-

ing.

ing. The only way left them, then, is the narrow funnelled net at the bottom, into which they fly, and there they are taken.

"It often happens, however, that the wild-fowl are in ſuch a ſtate of ſleepineſs or dozing, that they will not follow the decoy ducks. Uſe is then generally made of a dog who is taught his leſſon. He paſſes backward and forward between the reed-hedges, in which there are little holes, both for the decoy-man to ſee and for the little dog to paſs through. This attracts the eye of the wild fowl; who, prompted by curioſity, advance towards this little animal, while he all the time keeps playing among the reeds, nearer and nearer the funnel, till they follow him too far to recede. Sometimes the dog will not attract their attention, till a red handkerchief, or ſomething very ſingular, be put about him. The decoy-ducks never enter the funnel-net with the reſt, being taught to dive under water as ſoon as the reſt are driven in."

The general ſeaſon for catching fowl in decoys is from the latter end of October till February. The taking them earlier is prohibited by an act of George the Second, which impoſes

a penalty of five ſhillings for every bird deſtroyed at any other ſeaſon.

The Lincolnſhire decoys are commonly let at a certain annual rent, from five pounds to twenty pounds a year; and ſome even amount to thirty. Theſe principally contribute to ſupply the markets of London with wild-fowl. The number of ducks, widgeon, and teal, that are ſent thither is amazing. "Above thirty "thouſand, Goldſmith affirms, have been ſent "up in one ſeaſon from ten decoys in the "neighbourhood of Wainfleet."

To this manner of taking wild-fowl in England may be ſubjoined another ſtill more extraordinary, frequently practiſed in China. Whenever the fowler ſees a number of ducks ſettled in any particular plaſh of water, he ſends off two or three gourds to float among them. Theſe gourds reſemble our pompions; but, being made hollow, they ſwim on the ſurface of the water; and on one pool there may ſometimes be ſeen twenty or thirty of theſe gourds floating together. The fowl at firſt are a little ſhy of coming near them; but by degrees they come nearer; and as all birds at laſt grow familiar with a ſcare-crow, the ducks gather about theſe, and amuſe themſelves by whetting their bills

bills againſt them. When the birds are as familiar with the gourds as the fowler could wiſh, he then prepares to deceive them in good earneſt. He hollows out one of theſe gourds large enough to put his head in; and making holes to breathe and ſee through, he claps it on his head. Thus accoutered, he wades ſlowly into the water, keeping his body under, and nothing but his head in the gourd above the ſurface; and in that manner moves imperceptibly towards the fowls who ſuſpect no danger. At laſt, however, he fairly gets in among them; while they, having been long uſed to ſee gourds, take not the leaſt fright, while the enemy is in the very midſt of them: and an inſidious enemy he is; for ever as he approaches a fowl, he ſeizes it by the legs, and draws it in a jerk under water. There he faſtens it under his girdle, and goes to the next, till he has thus loaded himſelf with as many as he can carry away. When he has got his quantity, without ever attempting to diſturb the reſt of the fowls on the pool, he ſlowly moves off again; and in this manner pays the flock three or four viſits in a day. Of all the various artifices for catching fowl, this ſeems likely to be attended with the

greateſt ſucceſs, as it is the moſt practiſed in China.

The *Bochas*, or common wild-duck, from which the tame ſpecies take their origin, and to which they may be traced by unerring characters. The intermediate tail feathers of the drake are turned backwards, and the bill is ſtraight, two circumſtances that univerſally prevail in the ſame ſort. The difference of taſte is eaſily accounted for, from the differences of their food. They pair in the ſpring, build their neſts among the ruſhes near the water, and lay from ten to ſixteen eggs. The female is a very artful bird, eſpecially where the ſafety of her young are at ſtake. In ſummer they fly in pairs, bring up their young by the water-ſide, and lead them to food as ſoon as they are out of the ſhell. When apprehenſive of danger, they have been known to build their neſts in a high tree, in a deſerted crow's or magpie's neſt. At moulting time, when they cannot fly, they are caught in great plenty; and in their annual migration to this country, they are taken in decoys in ſtill greater abundance, particularly in Lincolnſhire, the grand magazine of wild fowl in this kingdom.

The

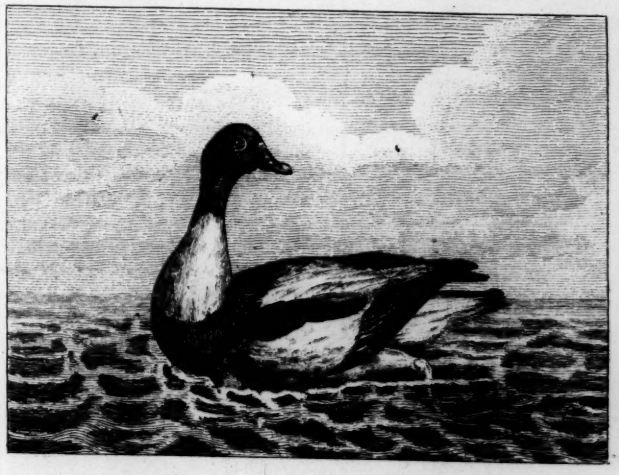
The *Eider Duck*, or Molliſſema, is double the ſize of the common duck, has a cylindrical bill; the male is white above, but black below and behind; the female greeniſh. This bird is found in the Weſtern Iſles of Scotland, but in great numbers in Norway, Iceland, Greenland, and many parts of North America, particularly in the Eſquimaux iſlands. The fleſh is every where much valued. The males are five years old before they come to their full colour, live to a great age, and will at length grow quite grey. The female lays from three to five eggs, large, ſmooth, gloſſy, and of a pale olive colour; though they ſometimes lay ſo many as eight; and generally among ſtones or plants near the ſea, but in a ſoft bed of down which they pluck from their own breaſts. The natives take away from the neſt both down and eggs, which the duck again repleniſhes; but if robbed a third time, the drake ſupplies the down: and after a third robbery, ſhe wholly deſerts the neſt. Yet they are ſaid to be ſo conſtant to their breeding places, that a pair has been obſerved to occupy the ſame neſt for many years ſucceſſively. The down, known by the name of eider, is imported in conſiderable quantities, on account of its light, warm, elaſtic

elaſtic quality, as a ſtuffing for coverlets for the infirm or luxurious. The natives are at much pains to collect this down, and as readily part with it for the enjoyments of brandy and tobacco.

The *Macula*, or ſcaup-duck, (ſo called from feeding on broken ſhell-fiſh,) is leſs than the common duck; it is a beautiful bird, but ſo diverſified in colouring, that ſcarcely two in a hundred can be found alike.

The *Sheldrake*, (Tadorna) has a flat bill, a compreſſed forehead, a greeniſh black head, and the body variegated with white. It is an inhabitant of the northern world, ſo far as Iceland. They uſually breed in deſerted rabbit-holes, and lay fifteen or ſixteen roundiſh white eggs, and ſit about thirty days. "They are "very careful of their young, ſays Latham, "and will carry them from place to place in "their bills:"—They alſo ſhew much inſtinctive cunning in preſerving them when attempted to be caught; for they will fly along the ground as if wounded, till the brood are got into a place of ſecurity. Their great beauty has induced many unſucceſsful attempts to domeſticate them; but they never thrive unleſs in the neighbourhood of ſalt water. The eggs are

Chinese Drake.



Sheldrake.

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are thought good, but the fleſh of this bird is rank and unſavory.

The *Spectabilis*, which is the grey-headed duck of Edwards, and the king-duck of Pennant, is a very beautiful ſpecies, found at Hudſon's Bay; they are pretty frequent in Siberia, and common in Greenland, where the fleſh is accounted excellent; and of the ſkins ſewed together, the natives make very comfortable garments; nor is its down leſs comfortable than that of the eider.

The *Nigra*, or *Scoter*, is the black diver of Ray; the male is totally black, the female browniſh; the tail reſembles a wedge; in the winter ſeaſon they are found on the coaſts of Great Britain; but are very numerous on the ſhores of France from November to March, where they feed upon a gloſſy bivalve ſhell, called *vaimeaux*, and are caught by placing nets under the water where theſe ſhells abound; to obtain which, the birds dive to a great depth, and thus thirty or forty dozen are often taken in a tide. They ſwallow the ſhells whole, which have been found quite crumbled to powder among their excrements. They are ſometimes kept tame, and fed upon ſoaked bread. Their fleſh is far from being agreeable, and is

of

of ſo very fiſhy a taſte that, perhaps by way of mortification, it is allowed to be eaten by Roman Catholics on faſt days. This ſpecies is alſo to be met with in North America; and it abounds in the northern parts of Europe, eſpecially on the great lakes and rivers of Siberia.

The *Hook-billed Drake* generally weighs two pounds or upwards, and is about two feet from the extremity of the bill to the end of the tail, and in breadth from the extenſion of each wing, near three feet. The bill is crooked, of a paliſh green, except the hook at the end, which is black; 'tis in length upwards of two inches.

The upper part of the neck, and the head, are of a dark green, with two ſmall white ſpeckled lines, one of which runs from the upper part of the bill, over the eye towards the back part of the head; the other runs from the bill to the lower part of the eye, around which there is a circle of fine white feathers, with ſmall white feathers under the chin. The breaſt, belly, and throat, are white, with ſmall tranſverſe ſpots, of a browniſh red, running croſs them. The ſix firſt of the prime feathers of the wings are white, the reſt of a reddiſh brown; the firſt row of covert feathers are blue tipped with white, the ſecond are brown with

with white tips. The ſcapular feathers of the wings, the ſides and the back, are of a reddiſh brown, which appears duſted or ſpeckled over with white.

The tail is black, with white tips, which turn up in a ſort of circular curl towards the back. The legs and feet are of a fine orange colour.

The *Mallard* is about the ſize of the preceding; his bill, from the angles of the mouth to the tip, is about two inches and a quarter, and near an inch broad, with a roundiſh tip at the end; the head and upper part of the neck are of a beautiful ſhining green; the under eye-lids white, with a ſort of half circle, or white ring, that paſſes round the fore part of the neck; the under part of the neck below the white ring to the breaſt, is of a gloſſy cheſnut colour. The under part of the breaſt and belly are a ſort of aſh colour, ſprinkled with a variety of dark ſpecks, reſembling drops; the back between the wings is of a cinerous red, in like manner ſprinkled or ſpeckled; the lower part towards the rump ſtill darker; the rump itſelf of a ſort of gloſſy purple. The ſides of the body, and the longer thigh-feathers, are beau-

tified with tranſverſe brown lines, with a bluiſh ſort of mixture.

The ſcapular feathers of the wings are of a fine ſilver colour, beautifully variegated with brown tranſverſe lines; the ſecond row of the quill-feathers tipped with white, with the outward webs of a fine bluiſh purple, and a border of black, running between the white and the blue; the reſt of the wings variegated with ſilver-coloured feathers, with ſome of their edges black, others of a dark purple.

The under part of the tail is black, the feathers on the upper part end in ſharp points, the middlemoſt of which turn up in a circular form towards the back, and appear of a fine gloſſy purple colour. They are feathered down to the knees, the legs and feet are of a ſaffron colour.

The *Tufted*, or *Black-creſted Duck*, is not quite ſo large as the wild Mallard, the ſhape of its body appearing more broad, ſhort, thick and compreſſed; the bill broad, and about two inches long, is of a paliſh blue colour, black at the tip; the upper part of the head is of a blackiſh mixed purple, with a fine creſt of feathers hanging down behind the head, of near two inches long; the noſtrils are pretty large, the

the iris of the eyes are of a gold colour, or fine yellow. The neck and upper part of the body are of a dark brown, much inclining to black.

The wings are ſhort, with black covert feathers, the outward wings of the ſame colour, by degrees growing more towards a white; the ſecond row of quills are all white, with black tips. The under part of the neck and the breaſt are black, the belly of a fine ſilver coloured white, as are alſo the thighs, and under parts of the wings. The tail is ſhort, compoſed of black feathers; the legs are ſhort, and the feet of a dark lead colour.

Mr. Albin ſays that at Venice, and other parts of Italy, it goes by the name of Cape Negro.

The *Upright Duck* is a bird that walks in a more ſtately and erect poſture than any other of this kind, from whence it has its name of the upright duck.

Its bill is of a greeniſh colour, with a ſort of brown ſhade or caſt; the circles of the eyes are white; the top of the head is quite black, under which, from the upper baſe of the bill, there runs a white circle which ſurrounds the top parts of the head; the other parts of the

head are of a dark colour, intermixed with ſhades of red and green, which by the reflection of different lights, appear very beautiful. The neck is finely variegated with white and black feathers; the wing-feathers are brown, with their outward edges white; the back is of a dark colour, intermixed with beautiful ſhades reſembling the rainbow; the ſides of the body underneath the wings, the thighs, and near the vent, are of a ſooty coloured black; the belly and breaſt white; the legs and feet are of a ſort of duſky yellow.

The *Muſcovy Drake* is conſiderably larger than the generality of fowls of the duck kind; ſome of them being as large as a ſmall ſized gooſe; the bill is broad and ſhort, of a reddiſh colour, a little hooked at the end; upon the upper part of which, between the noſtrils, there grows a ſmall round fleſhy excreſcence, that appears red like a ſmall cherry; the iris of the eyes are white, encircled with a fleſhy ſort of red ſubſtance, reſembling that on the bill.

The upper part of the head and neck appear of a duſky colour, a little mottled with white; the ſides of the wings and the back are of a very uncommon mixture of red, green, brown, purple,

purple, and white; the under part of the body white, interſperſed here and there with a few ſmall brown feathers; the legs and feet of a pale red, or rather orange colour.

Their fleſh differs from that of the common duck, and is ſaid to be much more pleaſant; they lay a great many eggs, and are excellent breeders; the hen has not the tuberous fleſh growing on her bill, but with reſpect to colour, is much the ſame as the cock.

The ambaſſador from the duke of Holſtein, in his travels to Muſcovy, ſays, he ſaw there a ſort of wild ducks, but bigger than ours, and as black as crows, with long necks, and forked bills. They are called by the Muſcovites, *braclan*, and are ſcarcely ever ſeen but in the night time: their quills are harder and bigger than thoſe of a crow.

The *Madagaſcar Duck* is in ſize very little larger than the common tame duck, and has a yellowiſh brown bill; the circles or iris of the eyes, are red, the head and neck of a dark green, the breaſt and lower parts of the body more inclining to a duſky brown, the outward edges of the feathers red; the back is of a fine dark purple, intermixed with blue, the edges of the feathers red; the ſcapular feathers are ſome

of

of them green, with red edges; others more duſky, with a beautiful bluiſh mixture; the firſt row of the covert feathers are pretty much of the ſame colour, the ſecond row green; the quill-feathers are all beautifully edged with red; the whole mixture of the colours ſhine with a curious and uncommon gloſs, and appear exceeding beautiful. The legs and feet or of an orange colour.

They are brought from Madagaſcar, in the Eaſt Indies, and are now bred by the curious in ſeveral parts of England.

The *Shoveller* weighs very near two pounds, and is from the point of the bill to the end of the tail, one or two and twenty inches, and upwards of eighteen from the extremity of each wing when extended.

The bill is of a fine black, conſiderably broader at the tip than at the baſe; dented in the middle, and riſing towards the end, with a ſmall ſort of crooked hook bending downwards, each mandible being toothed like a comb; the tongue is broad and fleſhy, eſpecially towards the end, the tip of which is of a ſort of ſemicular form. The circles of the eyes are of a fine yellow; the neck and head of a ſhining dark green, the crop and under part of the neck white,

white, the upper part of the ſhoulders of the ſame colour, but interſperſed with a variety of bold ſtrokes; the under part of the body red, except the feathers under the tail, behind the vent, which are black; the back is of a brown colour, beautifully ſhaded with a ſhining green purple and blue, which varies according to the light in which it is viewed.

The firſt ten or twelve quill feathers are quite brown; the next in the ſame row have all their extreme edges of a ſhining deep green, ſome of them varied with ſmall white lines, others are green, with white tips, which, when viewed together, appear like a ſort of croſs bar upon each wing; the covert feathers are many of them of a fine blue, others more inclining to an aſh colour; the tail is compoſed of party-coloured feathers, ſome of the borders entirely white, others on their extreme edges wholly black. The thighs are interſperſed with a conſiderable number of duſky coloured tranſverſe lines; the legs and feet of a fine red, reſembling the colour of vermillion; the claws black.

The hen bears a near reſemblance to the cock in the ſhape of its body, but differs very much in colour; the wings are pretty much like thoſe of the male, only the colours are more

more faint, and the ſhades not near ſo beautiful. The head, neck, and almoſt all the reſt of the body, both for colour and ſhape, very much reſemble that of the wild duck.

The membrane that connects the toes of each of them, are ſerated about the edges, and their feet ſeem to be conſiderably leſs than the generality of the duck kind.

The *Golden Eye* chiefly breeds in Italy; it has a large head and thick body, the neck ſhort, and the bill broad, elevated towards the point, of a black colour, and is, if meaſured from the angles of the mouth, about an inch and three quarters long; the head, when variouſly expoſed to the light, appears black, purple, and green, with a fine ſhining ſilky gloſs; it has a white ſpot on each ſide of the mouth; the eyes are of a fine gold colour; the neck, breaſt, and belly, white; the ſpace between the ſhoulders and the back is black; the wings of a fine beautiful mixture of black and white. The tail near three inches long; the legs ſhort, of a yellowiſh colour; the toes pretty long, and more duſky.

It has a diſagreeable fiſhy taſte; they are ſometimes, but very rarely, taken upon the Engliſh coaſt.

The

The *Pintail*, though to appearance nearly the ſame ſize, ſeldom weighs more than a pound and a half; the wing-feathers are very long; the upper mandible is of a bluiſh black, moſtly ſo about the noſtrils, the under quite black. The neck is longer than the generality of birds of this kind; it is ſlender, and of a brown colour, very much reſembling that of ruſty iron, with a tincture of purple behind the ears; on each ſide of which from the hinder part of the head, there runs a white line, which paſſes down the ſides of the neck; the feathers between the white lines are black, under which the neck is of an aſh colour; both the back and neck varied with black and white tranſverſe lines; the middle parts of the ſcapular feathers of the wings are black, their inner parts varied with a mixture of white, black and brown lines, ſome of the tips of the ſecond row of feathers white; others party-coloured, with ſhades of gloſſy red. The breaſt and lower parts of the body as far as the vent, are white; the under part of the tail, black; the thighs more pale, and varied with ſmall ſpecks of black; the two middlemoſt feathers of the tail are extended much longer than the reſt, running into ſharp points, from whence it is ſaid to take the name of pintail; the upper

part of the tail is of a ſort of aſh-colour, the tips of the feathers black. The feet are of a lead colour.

The *Widgeon* weighs near a pound and a half; it has a ſort of black nail at the end of the upper mandible of the bill, the other part of which is of a lead colour; the ſtructure of the head and mouth very much reſemble the common wild duck, only the head does not ſeem to be quite ſo large, in proportion to the body, which alſo appears of a finer ſhape, and the wings longer. The crown of the head towards the baſe of the bill, is of a pale pink colour, inclining to a reddiſh white; the other parts of the head and the neck, are red; the ſides of the body and the upper part of the breaſt, are tinctured with a very fair gloſſy, and beautiful claret colour, with a few ſmall tranſverſe lines of black. The feathers on the back are brown, the edges more pale or aſh-coloured; the ſcapular feathers, and thoſe under the fore part of the wings, are finally variegated with ſmall tranſverſe black and white lines, beautifully diſperſed like waves; the quill feathers are ſome of them brown, with white tips, others have their outward webs of a blackiſh purple; other parts, eſpecially thoſe beyond the covert feathers,

Widgeons. Male & Female.

Teal. Male & Female.

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thers of a lovely fine blue; ſome of the exterior feathers have their outward webs inclining to black, with a fine purple gloſs upon the borders, of which there are a number of ſmall light coloured ſpots; the reſt of the wing feathers are of a beautiful parti-coloured brown and white. The upper part of the tail is aſh-coloured; the under part behind the vent, black. The legs and feet are of a dark lead colour, and the claws black.

They are pretty common in Cambridgeſhire, the Iſle of Ely, &c. where the male is called the Widgeon, and the female, the Whewer. They feed upon wild periwinkles, graſs, weeds, &c. which grow at the bottom of rivers and lakes. Their fleſh has a very delicious taſte, not inferior to teal, or wild ducks.

The *Great-headed Widgeon* is larger than the common Widgeon, and the make of its body is conſiderably chicker and ſhorter, weighing often near two pounds when well fed; the bill is conſiderably larger and broader than that of the widgeon; the head, and the greateſt part of the neck, are of a fine fulvous red; the feathers from the upper part of the head, come down in the form of an acute angle, or peak, to the middle of the baſe of the upper mandi-

ble, which is of a lead colour, tipped with black, the under mandible being entirely black; the circles, or iris of the eyes, are of a fine yellow. The ſmall covert feathers of the wings, and likewiſe thoſe on the middle part of the back, and beautifully variegated with brown and cinerous, elegant waving lines. The rump, and feathers under the tail, are black; ſo that the tail, which is of a ſort of a greyiſh colour, and about two inches long, appeared encircled with a blackiſh ring.

The middle part of the breaſt, and lower part of the belly, very much reſemble the colour of the back, only the lines and points are of a more pale colour.

The quill-feathers are of a dark aſh-colour; and it is remarkable, all the feathers on the middle of the wings of this bird, are of one uniform colour, without the different variations commonly found in others of the kind.

The feet are of a lead colour, and the membranes that connect the toes, more dark and blackiſh.

The *Teal* is the ſmalleſt bird of the duck kind, and does not uſually weigh more than twelve or fourteen ounces; it is about ſixteen inches from the point of the bill to the end of the

the tail, and from the extremity of each wing, when extended, near two feet. The bill is of a dark brown colour, the head is conſiderably lighter, inclining to a bay, with a large white ſtripe over each eye, bending downwards, towards the back part of the head: the neck, back, and tail, are of a more duſky colour.

The breaſt is of a dirty coloured yellow, interſperſed with duſky tranſverſe lines; the belly more bright, with yellowiſh brown ſpots: the quill-feathers of the wings are of a duſky brown, with white edges; the covert feathers appear of a fine ſhining green, with their tips white; the ſcapular feathers are more inclining to an aſh-colour; the legs and feet are brown, the claws black.

They feed on water plants, ſeeds and graſs.

The *French Teal* is about the ſize of the former; the cock of this tribe has a broad black bill; the eyes are of a ſort of hazel colour; the upper part of the head and neck are of a light brown, or bay, with a ſhining green line running from each eye to the back part of the head, with a black ſpot intervening between, and a white line paſſing under the eyes: the back, the lower part of the neck, and lines underneath the wings, are beautified with fine waving

waving lines of black and white; the breaſt is more of a yellowiſh colour, ſpotted with black, that bears ſome reſemblance to ſcales; the belly is of a dirty white, or grey.

The wings are of a brown, or duſky colour, ſome of them with white tips, and their outward edges black; others green, with yellowiſh edges; the covert feathers have ſome of them white tips, and the green coverts appear of a yellowiſh red; the whole beautifully variegated with different ſhades, that make a very agreeable appearance to the eye; the tail is ſharp towards the end, and about three inches long: the legs and feet of a duſky pale colour.

Their fleſh is of a delicate taſte; it affords a fine nouriſhment to the body, and amongſt thoſe of its kind, is ſaid to challenge the firſt place.

The *Chineſe Teal* of Edwards, and the *Summer Duck* of Cateſby, are elegant ſpecies; the former is a native of China, ſometimes brought alive into England, but too tender to be reared in this country. The other inhabits Mexico and ſome of the Weſt India iſlands; and is to be ſeen here at times in the menageries of the curious.

THE KING-FISHER.

THE KING-FISHER is a peculiar ſpecies of bird, and although it may be ſaid to poſſeſs few characteriſtics of its own, yet it has a proportion of thoſe of almoſt every other. Its appetites for prey, conſidering its ſize, are equal to thoſe of the moſt rapacious kinds; it is no leſs attached to the watery element, than thoſe we have deſcribed as ſo partial thereto; its plumage is not inferior in beauty to that of the pheaſant or peacock. "It has," ſays a moſt reſpectable writer, "the ſhadings of the "humming-bird, the bill of the crane, and the "ſhort legs of the ſwallow." In ſize, this bird is ſome little bigger than a ſky-lark, but of a very clumſy ſhape; it has a ſtrong bill near three inches long, ſharp pointed and ſtraight, black upon the upper chap, and at the point; the angle of the lower chap is of a reddiſh kind of yellow;

yellow; and it has a broad, ſharp-pointed tongue. The under part of the neck and belly is of a light orange ſhade; the under parts of the wings and tail of a darkiſh green colour, intermixed with diſcontinued bluiſh lines; it has a reddiſh ſpot between the eyes and the noſtrils, which terminate beyond the eyes in a whitiſh colour; down the neck and middle of the back to near the end of the tail is of a bright pale bluiſh green, which appears exceeding ſplendid and delightful.

The quill-feathers, and thoſe next them, have their exterior webs of the ſame beautiful colour, the interior more duſky; the ſmaller rows of the wing-feathers have bluiſh tips, all except thoſe covering the baſe of the wing; the longer feathers that ſpring from the ſhoulders, and cover the back, are of a bluiſh green. The tail is about an inch and half long, of a dark blue, but more obſcure towards the end.

The legs and feet are ſhort, and of a red colour, and the claws black: there is ſomething ſingular in the diſpoſition of the joints and toes, the three lower joints of the outmoſt being joined to the middlemoſt. The inner toe is the leaſt, and not above half the length of the middlemoſt, and the outer one is almoſt equal to the middlemoſt;

middlemoſt; the back-toe is ſomewhat bigger than the inner fore-toe. Geſner ſays the fat of this bird is red, and Mr. Willoughby affirms the ſame. From the ſmallneſs of its ſize, its ſlender ſhort legs, and the beautiful colour with which its plumage is adorned, we are naturally inclined to be prejudiced in its favour, and it is with difficulty we are led to ſuppoſe it one of the moſt rapacious little animals that hover over the deep; yet ſuch is the fact, for it feeds entirely on fiſh, and is for ever on the wing in purſuit of its prey, and of which it takes ſurpriſing quantities, conſidering its diminutiveneſs; it generally hovers about the banks of the rivers, and takes its prey by balancing itſelf at a certain diſtance above the water until the fiſh appears in ſight, when it darts into the water after it, and will dive to a conſiderable depth, ſeizing its prey with inevitable certainty. While this bird remains ſuſpended in the air in a clear ſun-ſhiny day, its plumage exhibits a beautiful variety of the moſt dazzling and brilliant colours. And from this extraordinary beauty, it is natural to ſuppoſe, all the wonderful fables that have been framed of this bird, have originated; for, as it has been judiciouſly remarked, "wherever there is any thing

" uncommon, fancy is always willing to in-
" creaſe the wonder."

It has been boldly affirmed of this bird, that ſhe builds her neſt in the water, and thus in a few days hatches and produces her young; and to be uninterrupted in this taſk, it was added, that ſhe poſſeſſed a charm to allay the fury of the waves, and that during this period, the mariner might ſail with the greateſt ſecurity. The ancient poets are full of theſe fables, and their hiſtorians are not exempt from them. Cicero is ſaid to have written a long poem in praiſe of the *halcyon*; of which, however, there remain but two lines. The emperor Gordian is alſo ſaid to have written a poem on this ſubject; but of this there are not any remains. Theſe fables were likewiſe adopted by one of the earlieſt fathers of the church: " Be-
" hold," ſays St. Ambroſe, " the little bird
" which, in the midſt of the winter, lays her
" eggs on the ſand by the ſhore. From that mo-
" ment the winds are huſhed; the ſea becomes
" ſmooth, and the calm continues for fourteen
" days. This is the time ſhe requires; ſeven days
" to hatch, and ſeven days to foſter her young.
" Their Creator has taught theſe little animals
" to make their neſt in the midſt of the moſt
" ſtormy

" ſtormy ſeaſon, only to manifeſt his kindneſs " by granting them a laſting calm. The ſea- " men are not ignorant of this bleſſing; they " call this interval of fair weather their *halcyon* " *days*; and they are particularly careful to " ſeize the opportunity, as then they need fear " no interruption." This, and an hundred other inſtances, might be given of the credulity of mankind with reſpect to this bird; they entered into ſpeculations concerning the manner of her calming the deep, the formation of her neſt, and her peculiar ſagacity; at preſent we do not ſpeculate, becauſe we know, with reſpect to our king-fiſher, that moſt of the aſſertions are falſe. It may be alledged, indeed, with ſome ſhew of reaſon, that the halcyon of the ancients was a different bird from our king-fiſher; it may be urged, that many birds, eſpecially on the Indian ocean, build a floating neſt upon the ſea; but ſtill the hiſtory of the ancient halcyon is clogged with endleſs fable; and it is but an indifferent method to vindicate falſehood by ſhewing that a part of the ſtory is true.

The king-fiſher, with which we are acquainted at preſent, has none of thoſe powers of allaying the ſtorm, or building upon the waves; it is contented to make its neſt on the

banks of rivers, in ſuch ſituations as not to be affected by the riſing of the ſtream. When it has found a place for its purpoſe, it hollows out with its bill a hole about a yard deep; or if it finds the deſerted hole of a rat, or one cauſed by the root of a tree decaying, it takes quiet poſſeſſion thereof. This hole it enlarges at the bottom to a good ſize; and, lining it with the down of the willow, lays its eggs there without any farther preparation.

Its neſt, or rather hole, is very different from that deſcribed by the ancients, by whom it is ſaid to be made in the ſhape of a long-necked gourd of the bones of the ſea-needle. The bones, indeed, are found there in great quantities as well as the ſcales of fiſh; but theſe are the remains of the bird's food, and by no means brought there for the purpoſes of warmth or convenience. The king-fiſher, as Bellonius ſays, feeds upon fiſh, but is incapable of digeſting the bones and ſcales, which he throws up again as eagles and owls are ſeen to do a part of their prey. Theſe fill the bird's neſt of courſe; and, although they ſeem as if deſignedly placed there, are only a kind of nuiſance.

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In theſe holes, which, from the remains of fiſh brought there, are very fœtid, the king-fiſher is often found with from five eggs to nine. There the female continues to hatch even though diſturbed; and though the neſt be robbed, ſhe will again return and lay there. "I have had one of thoſe females brought me," ſays Reaumur, "which was taken from her neſt "about three leagues from my houſe. After "admiring the beauty of her colours, I let her "fly again, when the fond creature was in-"ſtantly ſeen to return back to the neſt where "ſhe had juſt before been made a captive. "There, joining the male, ſhe again began to "lay, though it was for the third time, and "though the ſeaſon was very far advanced. At "each time ſhe had ſeven eggs. The older "the neſt is, the greater quantity of fiſh-bones "and ſcales does it contain: theſe are diſpoſed "without any order; and ſometimes take up "a good deal of room."

The female begins to lay early in the ſeaſon; and excludes her firſt brood about the beginning of April. The male, whoſe fidelity exceeds even that of the turtle, brings her large proviſions of fiſh while ſhe is thus employed; and ſhe, contrary to moſt other birds, is found plump

plump and fat at that ſeaſon. The male, that uſed to twitter before this, now enters the neſt as quietly and privately as poſſible. The young ones are hatched at the expiration of twenty days; but are ſeen to differ as well in their ſize as in their beauty.

As the ancients have had their fables concerning this bird, ſo have the modern vulgar. It is an opinion generally received among them that the fleſh of the king-fiſher will not corrupt, and that it will even baniſh all vermin. This has no better foundation than that which is ſaid of its always pointing, when hung up dead, with its breath to the north. The only truth which can be affirmed of this bird when killed is, that its fleſh is utterly unfit to be eaten; while its beautiful plumage preſerves its luſtre longer than that of any other bird we know.

The *Smyrna King-fiſher* is near three times as large as the former, and has a long bill, very thick at the baſe, of a red colour, ending in a ſharp point; the iris of the eyes are white. The top of the head and neck, the lower part of the belly and thighs are brown; a broad ſtripe of white runs acroſs the breaſt, and terminates under the ſcapular feathers of the wings; the wings,

wings, back, and tail, are all of a fine dark green, the legs and feet of an admirable fine red.

They are found by the river ſides at Smyrna, as the former are here in England.

Barbot deſcribes a bird found on the coaſts of South Guinea, whoſe wings and upper part of his body, he ſays, are entirely blue, inclining to ſky colour; his breaſt of a dark yellow, mixed with ſome red and blue feathers, his bill very thick and long, his feet of a reddiſh colour, which ſeems to be a bird of this kind.

The *large Bengal King-fiſher* is as large as the common thruſh; the bill is very thick at the baſe, of a fine ſcarlet colour, and near three inches long, ending in a ſharp point like the former; the iris of the eyes of a beautiful yellow; the head, the upper part of the neck, and back, brown; the breaſt, throat, and part of the belly white, with five large brown ſpots on each ſide; the wings, the lower part of the back, and the tail, of a fine bright coloured bluiſh green, the covert feathers of the wings excepted, which are pretty much the ſame colour of the neck and upper part of the back; the legs and toes ſhort, and of an orange colour.

M. Pomet

M. Pomet deſcribes a bird found in the kingdom of Cambaya, which he calls the Indian king-fiſher, and ſays, when they are going to breed, they throw out of their mouths a white froth, with which they build a neſt, the bigneſs and ſhape of a round diſh, where they lay their eggs, and hatch their young ones; theſe neſts are of a white colour, tending to yellow, and of a hard, dry conſiſtence, the taſte being inſipid, and almoſt like that of vermicelli. Theſe neſts, as well as thoſe of a certain bird very much like a ſwallow, are brought from the Eaſt Indies into France and other parts of Europe, where for their fine flavour they are eſteemed a very great delicacy, are ſaid to afford very good nouriſhment, being boiled in water with a fowl and ginger.

The *ſmall Bengal King-fiſher* is about the ſize of the common Engliſh king-fiſher; the bill a fine ſcarlet colour, ſhaped like the former, with a ſpot of yellow upon the forehead, adjoining to it, and a large ſpot of white under the throat, with a broad black line intervening from the bill, and encompaſſing the eyes. The top of the head is of a dirty coloured red, under which there runs a dark blue line, which is ſeparated from the back by a broad ſtripe

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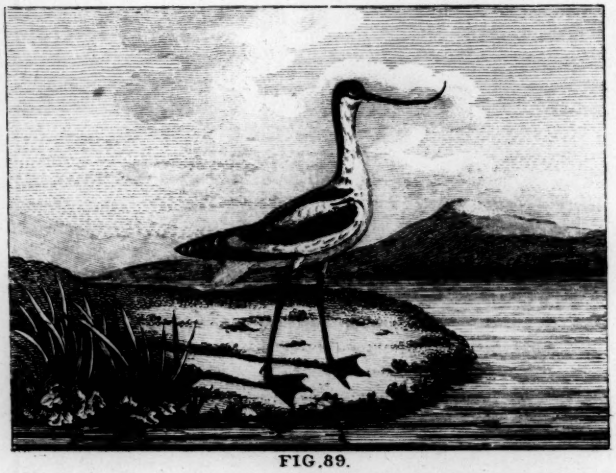

FIG. 89.

Avocetta.

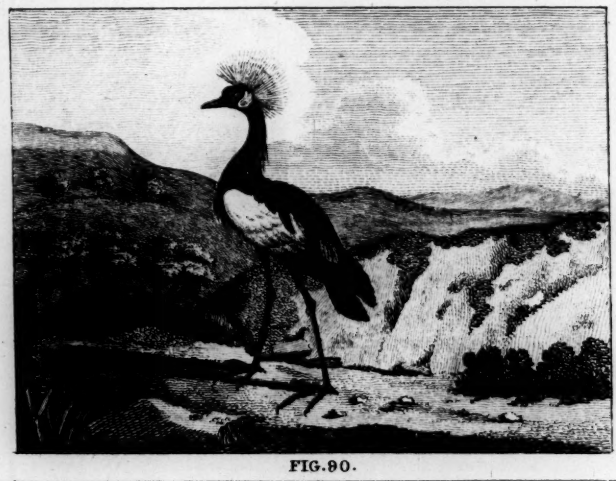

FIG. 90.

Crown Bird.

ſtripe of white; the back is a dark blue, the wings ſomething darker, the rump and upper part of the tail red, the under ſide of the belly, thighs, and tail, of a very beautiful yellow; the legs and feet much like the former, only of a deeper colour, and more inclining to a ſcarlet.

This ſpecies of birds are ſaid to dive under the water for their prey, which is chiefly ſmall fiſhes.

THE AVOSETTA.

WE have traced through the various tribes of birds which are moſt generally known, or at leaſt ſuch of whom as any conſiderable part of their natural habits and manners have been diſcovered, without, as already obſerved, pretending to lay down a poſitive axiom as to their claſſes; for ſome, which we may have thought to bear ſtrong affinities, may poſſibly be, in reality, very diſtinct families; but if that ſhould

be the caſe, very few, in the preceding pages, can be charged with being out of their places, ſince they are, in general, arranged according to their ſimilarities; a ſyſtem, we preſume, more calculated to give ſatisfaction, than to have followed any theoretical ſyſtem founded upon imaginary proofs of ſemblance and ideal ſpeculation.

It may, however, be thought congenial with our plan, to give alſo ſome little account of thoſe who are diſtinguiſhable for any peculiarities; a little it muſt be, as in moſt caſes we can do no more than give a deſcription of their ſize and plumage; but even that will be ſome ſatisfaction to the curious.

The firſt we ſhall mention of this kind is the *Avoſetta*, which is principally found near Milan in Italy; frequently at Rome and Italy, and ſometimes on the eaſtern coaſts of Suffolk and Norfolk, in the winter. The body is about the ſize of a pigeon, but very ſlender made, and tall, being from the tip of the bill to the end of the tail, fourteen inches long, and weighs about nine ounces; his beak is black, flat, and ſharp at the end, hooking upwards, which is peculiar to this bird only, about four inches long; the tongue ſhort and not cloven.

He

He has a fine ſtately pace, or way of walking; his head is not large, but round, and black on the top, and a little way down the back part of the neck; the body entirely white on the under ſide; the back and covert feathers white, ſpotted with duſky brown ſpots; the legs long, of a lovely bright azure colour, bare of feathers above the knees, the claws black, and very ſmall; it has a back toe, which is alſo ſmall.

From its being bare of feathers above the knee, we may naturally conclude, that it lives by wading in the waters, and that it has alſo ſome affinity to the crane kind, by its ſlender figure; yet, from them it differs in one moſt eſſential characteriſtic, namely, that of being web-footed like the duck. Johnſon ſays, that it has a chirping, pert note; but of its other habits, he gives us not the ſmalleſt account, and which, indeed, ſtill remain unknown.

From all the circumſtances that have hitherto been collected, the *Corrira* of Aldrovandus ſeems to be related to the above; but of this, yet leſs is known than of the former, and all the information we have is from that author, who ſays, that it has the longeſt legs of all web-footed fowls, except the flamingo and avoſetta; that the bill is ſtraight, yellow, and black at

the ends; that the pupils of the eyes are ſurrounded with two circles, one of which is bay, and the other white: below, near the belly, it is whitiſh; the tail, with two white feathers, black at the extremities; and that the upper part of the body is of the colour of ruſty iron.

THE CROWN BIRD

IS a fine ſtately Eaſt India fowl, about the ſize of an Engliſh turkey; the body is covered with long ſlender feathers reſembling hair, of a dark green colour, with a purpliſh caſt on the ſides and back, with a few broad ſtripes of red upon the wings, tending downwards; the thighs are a ſort of buff colour, the claws black. It has a large bluiſh, or gold-coloured tuft on the top of the head, grows up in ſhafts or ſtalks, with little balls upon the tops, that bear ſome little reſemblance to an earl's coronet, according to ſome; others ſay it is more like the tuft on the head of a Virginian nightingale. A little above the bill, upon the fore part of the head, is a ſmall red comb, and two red marks, reſembling ears, on each ſide of the head; the bill is ſhort and thick, bending downward, of a yellow colour.

This ſeems to be the bird deſcribed by Mr. Tavernier in his travels into India; great numbers

bers of which are found in the territories of Cambaya, Broudra, &c. which in the day-time walk about the fields, but in the night rooſt upon the trees. The fleſh of the young ones, he ſays, is white, and well taſted. In thoſe parts where the Mahometans govern, you may catch them without danger; but in thoſe territories where idolatrous rajahs are maſters, it is very dangerous to kill them, or any other bird or animal; for the banians count it ſacrilege, and will ſeverely puniſh any they can ſeize. They whipped a Perſian merchant to death, and took all his money, to the value of three hundred thouſand rupees, for ſhooting a peacock.

The *Mexican Crown Bird* has a thick ſhort bill, of a ſort of fleſh colour, or tawny, with a large creſt of green feathers upon the head, which it raiſes and falls at pleaſure. The head, neck, back, breaſt, and part of the belly and thighs, are of a browniſh duſky colour. The four firſt quill-feathers of the wings are a fine ſcarlet, the laſt having fine long white marks upon the outward web: the reſt of the quill-feathers and the tail are purple, as are alſo the covert and ſcapular feathers of the wings, with a fine mixture of green, interſperſed through the

the whole. The legs and feet are bluiſh, or lead-colour. It is in ſize pretty near to that of a fieldfare.

Barbot, in his deſcription of his voyage to South Guinea, deſcribes this as a fine bird, of various colours, as white, black, brown, red, ſky colour, blue, &c. having a long tail, the feathers whereof, he ſays, the blacks wear on their heads. He deſcribes ſome of them which are of a gold colour, and others with charming blue tufts on their heads, much in the form of a Virginian nightingale's.

THE CARASOW.

THIS bird takes its name from a part of the Weſt Indies, from whence it is brought; the Indians call it the Mountain Bird, and ſome travellers give it the name of a wild turkey; it is a bird which is eaſily made tame and ſociable, ſo as to accompany with other fowls.

This

This beautiful bird is black upon the head and neck, reſembling velvet, and has a high creſt of curious ruffled black feathers like a half circle, which riſes ſpirally from the top of its head, with a white circle running croſs them; theſe it can erect, or let fall at pleaſure. The reſt of the body, excepting the lower part of it, of the cock, are black; that of the hen rather of a duſky brown; the tail is black, with four bars of white running croſs it near the extremity, at equal diſtances. The bill is thick on the upper mandible, of which there is a round excreſcence as big as a haſle nut; the eyes are black, and the legs pretty long, and the ſize of its body not a great deal leſs than a common turkey.

M. W. in his deſcription of the kingdom of Moſqueto, calls it a ſmall Indian turkey, and ſays they are very welcome game to the hungry traveller, who may ſhoot all he meets with, one after another, they being ſo very tame, that they will ſcarcely fly away; they keep frequently ten or a dozen in a flock, and are excellent meat.

The author of the Buccaniers of America takes notice of this bird under the name of Oecos, and ſays it very much reſembles the European

European turkey; and that the feathers of ſome of the male kind are inclining to a red, but thoſe of the female to black.

Dr. Gemelli ſays they have abundance of them in New Spain, which about the new of the moon are eaſily killed, for when one falls, he ſays, there is no danger of the reſt flying away at the noiſe of the guns.

The *Red Bird* ſeems to be a ſpecies of the Caraſow, and the diſagreement no more than what may ariſe from the different places where they are bred, or ſuch difference as is common among many fowls of the ſame kind, both wild and tame. Upon the head of this bird there appears a very beautiful creſt, the outermoſt edges of which are black; the under part, nearer to the head, and part of the neck, are of a lead colour; the reſt of the body, a very fine red, only the wings and tail ſomething darker than the other parts. The legs and feet black.

Her late Majeſty Queen Caroline, when Princeſs of Wales, had one of them kept at Richmond amongſt her collection of rarities, where the name ſeems to have been impoſed upon it on account of its colour, or rather for want of knowing its real one.

THE GAULDING.

THERE are ſeveral varieties of this ſpecies, the moſt remarkable of which is the Large White Gaulding, which meaſures from the end of the bill to that of the tail, about three foot and a half, and about four foot from the extenſion of each wing; the bill is very long, angular, and of a yellow colour, in which there are two long ſlits for noſtrils. The neck is very crooked, reſembling in ſome degree a Roman S, and is about eleven inches long. The feathers that cover the whole body are of an exceeding beautiful milk white colour. The thighs, legs, and toes, are about ten inches long, and are covered with large ſcales, of a bluiſh black colour. It has four toes, one behind, and three before, the middlemoſt of which is near three inches long; the claws are black; and there is a ſmall web between the two outermoſt toes.

It feeds upon ſmall fiſh, and frequents the ſea marſhes and ſalt pools.

Capt. Wood obſerves, that in the North Weſt parts of Greenland there is a ſort of fowl which the natives catch with ſprings and ſnares, chiefly for the ſake of their ſkin and feathers, which being thick, they dreſs and make garments of them, like furs, wearing the feathers outward in the ſummer time, and inward in the winter. He ſays two or three of his men killed 1500 of them in one day.

One would from this account imagine, ſnares would be as unneceſſary here as in the bird iſland in America, mentioned by the Earl of Cumberland, who ſays, there are ſuch incredible numbers of birds found in it, that there needs no artifice to take them; for a man may catch with his hands alone almoſt enough to ſerve a whole fleet.

The *Blue Gaulding* is from its bill to the end of the tail about eighteen or twenty inches, and from the extenſion of each wing, about a yard. The part of the bill towards the head is of a bluiſh colour, and black towards the extremity; it is very ſharp, and about two inches and a half long; it has a greeniſh ſkin about the eyes, and a tuft of thin ſmall longiſh

feathers upon the head; the neck is about ſix inches long, covered with thin feathers of a bluiſh black colour; the whole body of the bird being nearly the ſame colour, except the breaſt, belly, and under the wings, which appear ſomething lighter.

The legs are covered with greeniſh ſcales, and are about ſeven or eight inches long; it has four toes, one behind and three before, the middlemoſt of which is about two inches long; and it has black crooked ſharp claws.

They feed on ſhrimps, young crabs, ſpiders, and field crickets; and frequent ponds and watery places.

THE OTIS, OR TARDA.

THIS bird is of the ſize of a large cock, has only three claws on a foot, an oblong head, full eyes, a ſharp bill, a bony tongue, and a ſlender neck. Bellonius and Geſner deſcribe it as much larger and ſtronger, and as weighing ſometimes thirteen pounds and an half. The head, which is but indifferently ſhaped, is of an aſh colour, as is likewiſe the neck down to the breaſt. It has a ſtrong bill, and a ſerated or ſaw-like tongue, ſharp on both ſides, and hard towards the end; with ſo wide an ear, or auditory duct, that the end of a finger may be introduced. And upon examining under the feathers, two cavities will appear, one towards the bill, and the other leading directly to the brain. It has a plump round breaſt, is covered with white feathers on the belly, and to the middle of the thighs, and has a great many dark brown and blackiſh ſpots on the back. The larger feathers in the wings are white,

white, but black towards the end, and at the roots red. Thoſe of the tail are of a dark red, and adorned with a great many fine ſtreaks and black ſpots on the outſide, and on the inſide with red. The legs are about a foot in length, pretty thick and ſcaly.

This ſeems to be a ſort of buſtard, ſuch as are found upon the hills, and in the woods in the northern parts of Germany. The fleſh is ſaid to reſemble that of the pheaſant, and was ſo acceptable to the Emperor Caligula, that, as Suetonius relates, he would have had it offered in ſacrifice in his temple.

THE BRASILIAN NIGHT BIRD.

THIS bird is variouſly deſcribed as to ſize; ſome contending they are ſeldom larger than a fowl, while others maintain they are bigger than a gooſe; the probability is, that there are ſome not only of both, but alſo of the intermediate ſizes. It is an ill-favoured bird; the head much reſembles that of a cat; it has a crooked bill, the upper mandible hanging a good way over the under, the eyes are large and ſprightly ſhining like cryſtal, the inner circle appears of a whitiſh yellow; it has two large tufts of feathers, near two fingers long, upon the head, reſembling ears; the tail is ſo ſhort, that it is not ſeen when the wings, which are very long, are cloſed.

The thighs and legs are covered with ſhort down, or feathers, as low as the feet, which are armed with ſtrong crooked claws, near three

three inches long, and very ſharp. The feathers of the whole body are of a gold colour, ſprinkled up and down with black and white ſpots.

THE BLUE AND SOLITARY THRUSHES.

THESE are two very curious ſpecies, perfectly reſembling each other in habits and in manners. Their plumage is in general blue, though the latter has a caſt of brown. It is not uncommon in France and Italy, where it chuſes the moſt frightful precipices for its reſidence, whence it probably receives its name. As it is rarely caught, it is in high eſtimation even in the countries where it breeds, but ſtill more valuable when carried from home. It not only whiſtles in the moſt delightful manner, but ſpeaks with an articulate diſtinct voice. It is ſo docile, and obſerves all things with ſuch diligence, that, though waked at midnight by any of the family, it will ſpeak and whiſtle at the word of command.

THE BENGAL QUAIL.

THIS is a beautiful bird, and larger than the European quail; it has a dark brown bill; the top part of the head is covered with black, like a cap, under which there runs a large yellow ſtreak, which is continued from the root of the bill to the back part of the head; the eye is encompaſſed with a large black line, which reaches from the corner of the mouth to the other ſide of the head, under which there runs a white ſtreak, or line. The under parts of the body are of a yellowiſh or buff colour, except that part next the tail, which is ſpotted with red. The hinder part of the neck and back, with the covert feathers of the wings, are of a yellowiſh green, except a large diviſion of a pale bluiſh green, upon the pinion of the wings, and another pretty much the ſame upon the rump; the legs and feet are a ſort of orange colour, the claws of a dark red.

M. Miſſon, in his voyage to Italy, obſerves, that vaſt quantities come into thoſe parts every ſpring from the African ſhore; and that they are ſo tired with their long voyage, that they will ſettle upon the ſhips they firſt light on, from whence they are taken with very little trouble. It is ſurpriſing how a bird which has no very ſtrong wing, ſhould be able to continue ſo long a flight. Joſephus ſays the Arabian Gulph breeds more quails than any other place. Varro and others remark, that ſuch large numbers have in the ſpring time lighted upon ſhips at ſea, in their paſſage from one climate to another, as to ſink the ſhips; and that an hundred thouſands of quails and ſwallows together have been taken in a day. And Diodorus Sciculus gives much the ſame account of taking them at Rhinoculara, on the edge of the wilderneſs where the children of Iſrael were fed.

Beauplan, in his deſcription of Ukraine, in Tartary, ſays there are a ſort of quails in thoſe parts, with blue feet, which are preſent death to any that eat of them.

THE HOOPOE.

IN ſhape of the body, the cock reſembles that of the Plover, but the hen is much leſs, and more ſlender. The head is adorned with a double row of feathers, reaching all along the top of it, from the bill near to the nape of the neck, which forms a beautiful creſt about two inches high, and is made up of twenty four feathers of different lengths, which it can raiſe or let fall at pleaſure: the tips of which are black: under the black, white, and of a fine cheſnut, inclining to yellow, on the remaining part under the white; the neck is of a pale reddiſh yellow, and the breaſt white, with ſome few black ſtrokes tending downwards; the back and wings are variegated with black and white croſs lines or bars. It has a black ſharp bill, about two inches and a quarter long, bending downwards. It is ſaid to weigh about ten or

twelve ounces, and is from the tip of the bill to the end of the tail twelve inches, or upwards, and about eighteen inches in breadth when the wings are extended.

They are very rarely ſeen in England, but are very common in High Germany, eſpecially about Cologn, where they are diſtinguiſhed by the name of Widehuppe, and generally ſit upon the ground, but ſometimes upon the willow trees; they feed upon beetles and various other inſects, much like the common Woodpecker.

THE RED LEGGED HORSEMAN

IS a ſingular and uncommon bird; it is ſuppoſed to be a native of the Low Countries; very few of them have been ſeen in England, and thoſe few in the eaſtern parts of Eſſex, where they acquired their name, which cannot, however, be juſtly applied, on account of the colour of their legs, for although thoſe of the cock are of a pale red, thoſe of the hen are green. The top of the head and the neck are of a fine light brown, the bill is ſlender, and near two inches long, of a reddiſh colour at the baſe, and black at the point. The covert-feathers in the middle of the wings black, but downwards, within two inches of the end of the tail, they are of a brown colour, edged with white. The legs are pretty long, the claws ſmall, and black. They are ſaid to be about ſixteen or eighteen inches from the point of the bill to the end of the claws; and in breadth, when the wings are fully expanded, two foot. Its weight about half a pound.

THE EAST INDIA MARTIN

IS about the ſize of a common magpie, of a black colour, with a yellow bill, and a large yellow tuft upon the head; the middle part of the wings is white; the feet are yellow, with large crooked claws. The Javaneſe are great admirers of this bird, and frequently teach them to whiſtle and to talk, which they do as diſtinctly as a man, but with ſomewhat a rougher voice. There is another ſort of them that is of a ſmaller ſize.

They are found all over the Indies, and feed upon rice, and other fruits of the earth.

THE PORKOE

IS a Guinea bird, as ugly as rare, exactly the ſize of a gooſe, its wings extraordinary long and broad, made up of dark-coloured feathers; the under part of its body covered with aſh coloured feathers, or rather hairs, for they are as like the one as the other; having under his neck a maw or bag about a ſpan long, as thick as a man's arm, like a red ſkin, in which it lays up its food, as the monkeys do in their chops; the neck, which is pretty long, and the red knob on the nape, is garniſhed with the ſame ſort of feathers or hairs as the under part of the body, in proportion to which the head is much too large, and, excepting a very few hairs, it is very bald; the eyes are large and black, the bill extraordinary long and thick.

This creature feeds commonly on fiſh, which when toſſed it catches very nimbly, and ſwallows down whole into its crop, or maw; and will

will at once devour as much fiſh as would ſerve four men; it is likewiſe a lover of rats, and will ſwallow them whole.

When a boy or dog is ſet on them they will make a good defence, pecking and ſtriking them with their bills very ſmartly, which makes a noiſe as if two ſticks were ſtriking one upon another.

THE BEE-EATER

IN the ſhape of its body very much reſembles the king-fiſher, and is about the ſize of a common black-bird; the bill is large, and near two inches long, but bends downward, and is a good deal more arched than the king-fiſher's; the tongue is ſlender, but appears rough towards the end, and jagged, as if it were torn. The eyes are, in ſome, hazle; in others, of a beautiful red colour.

It has a large oblong head, the feathers at the baſe of the upper chap, are white, ſhaded with

with a ſort of green and yellow colours; the back part of the head of ſome is of a deep red; in others, there is a mixture of green amongſt it; from the corners of the bill, along each ſide of the head, there is a black ſtroke extends itſelf beyond the eyes; contiguous to which, on the under part of the head, the feathers are of a pale yellow; the belly, neck, and breaſt, are of a bluiſh green; the ſcapular feathers in ſome are blue; in others, green, with a mixture of red. The large wing-feathers are of a ſort of orange colour, with black tips, intermixed with ſome few green ones; the reſt of the wing-feathers are in ſome birds more red, in others, more blue. The tail is upwards of three inches long, and conſiſts of about twelve feathers; the two middlemoſt of which are conſiderably longer than the reſt, and end in ſharp points; the colour of the tail varies; in ſome it is green, in others, blue; the under ſide of a dark brown.

The legs and feet very nearly reſemble thoſe of the king-fiſher, the toes being joined much in the ſame manner; they are generally of a blackiſh colour, ſometimes of a ſort of brown or duſky red; the claws black.

Bellonius ſays it is common in the iſland of Crete, and ſometimes is ſeen in ſome parts of Italy, but is unknown upon the continent of Greece. It feeds not only on bees, but upon cicada, beetles, graſshoppers, and other inſects, and alſo on the ſeed of nipplewort, baſtard parſley, turnips, &c. They fly in flocks, and frequent the mountains that bear wild thyme.

Ariſtotle ſays they build in hollow places or caverns three or four cubits deep, and lay ſix or ſeven eggs.

The *Bengal Bea-eater* is about the ſize of the former, and has a black bill, thick at the baſe, bending downwards, near two inches long, the eyes a fine red; a black ſtroke is extended on each ſide of the head, which begins at the corners of the mouth, and paſſes beyond the eyes. The baſe of the upper chap, and under the chin, is covered with bright pale blue feathers; the upper, and back part of the head, of a duſky yellow; the back and wings of the ſame colour, only ſhaded pretty ſtrongly with a green; the tips of the quill-feathers brown; the breaſt and belly green; the thighs and under part near the vent, of a pale yellow, with a ſmall green mixture. The tail conſiſts of the

ſame

ſame number of feathers as the former; the outermoſt, on each ſide, are of a green and yellow mixture, about three inches in length; the two middlemoſt twice that length, ending in ſharp points, of a brown or duſky colour; the legs and feet black, much like the former.

THE WRY-NECK

IS nearly the ſize of a common lark, has a ſhort lead-coloured bill, ſomething leſs triangular than the reſt of the birds of this kind, and has a round tongue, which ends in a ſharp bony ſubſtance, and pointed like a thorn, with which it generally ſtrikes the ants that are its food, which, by the glutinous matter it contains, and the bird contracting its tongue, it ſwallows them without ever touching them with its bill.

Its plumage, in general, is very elegant and curiouſly coloured; the upper part of the body being variegated with a great many colours,

and a beautiful ſharp line that runs from the crown of the head along the middle of the back. As a means of diſtinguiſhing the cock from the hen, Mr. Denham has been ſo curious as to obſerve, that the black line upon the cock runs no farther than the upper part of the neck, but that of the hen, he ſays, reaches almoſt to the very bill; alſo, that the cock's belly is naked, as is the hen's when ſhe ſits; from whence he concludes, it takes its turn in incubation. The lower part of the belly and the throat are yellowiſh, with ſome black tranſverſe lines; the prime feathers of the wings are ſpotted with large white ſpots; the rump of an aſh colour. The tail is about two inches long, croſſed at diſtant intervals with black, and ſprinkled with little dark coloured ſpecks, but does not bend inwards, as other woodpeckers do. The legs and feet are ſhort, and the claws diſpoſed in the ſame manner as other birds of this kind.

There is ſomething ridiculouſly odd in its geſture, it frequently turning its head quite back to its ſhoulders; from whence the ancients have given it the name of Torquilla. The body of the hen is of a paler, or more cinerous colour than the cock.

THE KOKOI

IS a Braſilian bird of the crane kind, and is a very pleaſing bird to the ſight, about the ſize of a ſtork; their bills are ſtraight and ſharp, about ſix fingers in length, of a yellowiſh colour, inclining to green; the neck is fifteen fingers long, the body ten, the tail five; the neck and throat are white; both ſides of the head black, mixed with aſh-colour. On the undermoſt part of the neck, are moſt delicious white, long, and thin feathers, fit for plumes; the wings and tail are of an aſh colour, mixed with ſome white feathers; all along the back, are long and light feathers like thoſe on the neck, but of an aſh colour; the legs are very long, and covered above half the way down with feathers. Their fleſh is very good, and of a grateful taſte.

THE VULTURINE EAGLE, AND OTHERS OF THE EAGLE KIND.

THE *Vulturine Eagle* is nearly the ſize of the common eagle, and is bald on the top of the head and neck, except ſome parts that are covered with a ſort of whitiſh down; the bill is black, and ſtraight, for near half way, the other part, eſpecially towards the point, bends downwards into a remarkable hook, a good deal reſembling that of the common vulture. The under part of the bill, and ſides of the face, about the eyes, are covered over with a duſky coloured down. The pupil of the eye is black, and the irides yellow. The belly and breaſt are of a paliſh cream colour, ſpotted with duſky oblong ſpots; the covert feathers of the wing, and the back are of a reddiſh brown; the quill-feathers and the tail are black; the legs and the upper part of the feet are lead colour, the under ſide brown; the talons are black, large, and hooked.

Mr.

Mr. Clayton, in his account of Virginia, printed in the Philoſophical Tranſactions, ſays, they have there three ſorts of eagles; the largeſt is what they call the grey eagle, being much of the colour of our kite, or gledge; the ſecond is the bald eagle, for the body and part of the neck and head are covered with a white ſort of down, whereby it looks very bald, whence it derives the name; the third is the black eagle, reſembling moſt of all the Engliſh eagle; they generally build their neſts on the top of ſome tall old tree, ſtripped of its boughs, and near a river ſide, and the people uſually fell the tree when they take the young. When this eagle obſerves that the fiſhing-hawk hath ſtruck a fiſh, he takes wing immediately, and it is ſometimes very pleaſant to ſee the flight; for when the fiſhing-hawk perceives himſelf purſued, he ſcreams and makes a terrible noiſe, till at length he drops the fiſh to make his eſcape, which the eagle frequently catches before it reaches the earth or water. Theſe eagles kill young lambs, pigs, &c.

Martin, in his deſcription of ſome of the Weſtern Iſles of Scotland, ſays the natives there obſerve, that the eagle, in deſtroying the deer, fixes his talons between their horns; and beating its wings conſtantly about their eyes, while

while ſeveral other eagles, flying at the ſame time on both ſides, force the deer upon a continual run, till it at laſt falls into ſome pit, or down a precipice, where it is deſtroyed, and becomes a more eaſy prey to its enemies.

The *Oſſifrage*. The head of this bird is wholly white, the whole body is like the Vultures, with long wings, and a long tail. Aldrovandus mentions two ſorts of this bird, the firſt of theſe is larger than the other, the head whitiſh, the beak crooked like the hawk's, the top part of which next the head is white, the reſt black; the circle round the eyes is white, the ball black. The colour of the whole body is a dark cheſnut, inclining to blackiſh. He is found in the woods and mountains of Syria and Egypt.

Its food is chiefly dead carcaſes of other fowls and reptiles.

It is ſaid by the antients, that this bird is impatient of cold, the body being of a hot nature by eating of fleſh.

A modern author, takes it to be of the eagle kind, a bird of prey, and the ſame mentioned by Moſes.

The *Tunis*, or *Barbary Falcon*, is a ſprightly majeſtic bird, and has a large black bill, with open

open yellow noſtrils; the eyes are of a ſort of blackiſh brown, or dark hazle colour, with ſmall circles of yellow round them. The top of the head is of a pale aſh colour, beautifully ſpotted with black; the back and ſcapular feathers, and ſome of the covert feathers of the wings, are pretty much of the ſame colour; the back having ſome fine black ſpots intermixed, much like thoſe on the top of the head. The breaſt, belly, and thighs, are more of a yellowiſh colour, inclining to white; the upper part of the breaſt, pretty much ſhaded with a blue. There is a large ſpot or two of white on the ſecond row of the covert feathers of the wings. The wings are very long, reaching, when cloſed, almoſt to the end of the tail. The tail is of a bluiſh colour, with ſix or ſeven duſky coloured rings running acroſs it. Some part of the thighs, and under part of the belly, are ſpotted with curious long black ſpots, reſembling ermine. The legs and the feet are yellow, and the claws or talons black.

THE BOATBILL

IS a very curious bird, and is found in the ſouthern parts of America, of which it is a native; it is about the ſize of a common fowl. The general colour of the bill is duſky, and the ſkin beneath the under jaw is capable of diſtention. From behind the head ſprings a long black creſt. The plumage on the forehead is white, and the reſt of the bird is a pale bluiſh aſh colour; and the feathers which hang over the breaſt, are looſe, like thoſe of the heron. There are varieties of this bird, both ſpotted and brown, but they appear ſimple varieties, and not at all entitled to the denomination of ſpecies. Like the king's-fiſher it preys upon fiſh, which it catches by perching on trees that over-hang the ſtreams, and dropping on the fiſh as they ſwim by.

THE UMBRE

IS brought from the Cape of Good Hope, it is the ſize of a crow, and not much differing in colour, as it is of a deep brown, or umbre. The bill is three inches and a half in length, with a furrow on each ſide the upper mandible, and from the head ſprings a large creſt of black feathers, better than four inches in length.

THE JACANA

IS found in moſt of the tropical climates, but is moſt common in South America. It is remarkable for the length of its toes, and for the wings being armed in front with ſharp ſpurs. There are about ten ſpecies, differing in ſize from that of a common fowl to that of a water-rail. They vary alſo in their plumage,

ſome brown, ſome black, and ſome variable. The *faithful jacana* is a moſt uſeful bird at Carthagena in South America. The natives, who keep poultry in great numbers, have one of theſe tame, who attends the flock as a ſhepherd, to defend them from birds of prey. Though not larger than a dunghill cock, the jacana is able, by means of the ſpurs on his wings, to keep off birds as large as the carrion vulture, and even that bird himſelf; and it never deſerts its charge, but aſſiduouſly takes care to bring the whole flock ſafe home at night. It feeds on vegetables, and cannot run but by the help of its wings.

THE SHEATHBILL

IS an inhabitant of New Zealand, and is remarkable for a horny ſheath which covers the upper part of its bill, which is alſo moveable, and may be raiſed upwards or laid flat on the bill. We know of but one ſpecies, which is as large as a pigeon, and as white as ſnow. They feed on ſhell fiſh and carrion.

THE CRAKE

IS a bird well known in many parts of Great Britain, but it is ſtill more common in Ireland. In ſhape it much reſembles the water-rail, and was once erroneouſly ſuppoſed to be the ſame bird, differing only by a change of colour at a certain

certain ſeaſon of the year. The bill, however, in this ſpecies is ſhort and thick, exactly reſembling in ſhape that of the common gallinule, or water-hen, from which it however differs, not only in its plumage, which is a reddiſh brown, but in its habits, as it never frequents watery places, but is always found in graſs, corn, or furze. With us it is a bird of paſſage, and on its firſt arrival about April, is very lean, not weighing more than ſix ounces; but before its departure it weighs more than eight. The fleſh is good food.

THE HORNBILL.

THIS is a race of birds, conſiſting, as it has been ſtated by ſome nomenclators, of eleven ſpecies; it is nearly allied to the toucan, and indeed ſeems to hold the ſame place in the warm climates of the old continent, as the toucan does in the new. The diſtinguiſhing characteriſtic of this genus is an immenſe bending bill, with frequently

frequently a large protuberance in the upper part of it, reſembling an additional bill.

The *Rhinoceros Hornbill*, or *Rhinoceros Bird*, is nearly as large as a turkey; the bill is ten inches long, and two and a half thick at the baſe. On the upper part is an appendage as large as the bill itſelf, and turning upwards, which meaſure eight inches in height. There is nothing elſe remarkable in the bird, as the general colour of the plumage is black. This bird is found in moſt parts of the Eaſt Indies, where, like the raven, it feeds upon carrion.

The *Helmet Hornbill* is remarkable for having the ſame prominence of a conical form; and in the Philippine Iſles there is a ſpecies, the horn of which reaches backwards beyond the eyes, ending in two angular points, which produce the effect of a bird with two horns.

The *Pied Hornbill* of Malabar is diſtinguiſhed from the reſt of its kind by the breaſt, belly, and part of the wings, being white, the remainder of the body is, like the reſt of theſe animals, black.

THE CHATTERERS.

THESE, though ſo little of their habits are known, form a very beautiful race of birds, including about ten ſpecies. That which is called the *Waxen* or *Bohemian Chatterer* is the ſize of a large lark, eight inches. Its head is adorned with a beautiful pointed creſt. The upper parts of the body are of a reddiſh aſh colour; the breaſt and belly of a pale purpliſh cheſnut; a black ſtreak paſſes over each eye; the chin alſo and quills are black. Their native country is Bohemia, whence they wander in flocks all over Europe, and were formerly ſuperſtitiouſly conſidered as a preſage of a peſtilence. They are ſeldom ſeen in the ſouth parts of Britain.

The *Carunculated Chatterer* is a native of Cayenne and Braſil. It is about twelve inches long. The plumage of the male is of a pure white, except a tinge of yellow on the rump, quills,

quills, and tail. The female has the upper parts of the plumage olive grey, and the lower parts grey, edged with olive. Both have a fleſhy caruncule at the baſe of the bill, which projects over it like that of a turkey-cock. Their voice, as is that of all the kind, is ſo loud and noiſy, that they may be heard at the diſtance of half a league.

THE GRACKLE.

OF this kind there are about eleven ſpecies inhabiting America and the tropical climates, ſome of them the ſize of a magpie, others about that of a blackbird. Their general plumage is black. They live on maize, fruits and inſects; but one ſpecies in the Philippine Iſlands, which is called from its beauty, the *Paradiſe Grackle*, is remarkable for its being an extraordinary deſtroyer of graſshoppers. It ſtands upon record, that the inhabitants of the Iſle of Bourbon,

being greatly infeſted with that inſect, imported a pair of theſe birds, which preſently relieved them from that peſt. In proceſs of time, however, the grackles became very numerous, and the inhabitants thinking them injurious, proſcribed them by an edict, on which the graſshoppers increaſed ſo faſt upon them, that they were obliged to ſend for more, which preſently diſpatched every graſshopper on the iſland.

The *Boat-tailed Grackle* is a native of Jamaica. Its plumage is black, and it is remarkable for the feathers of its tail forming a hollow like a boat on the upper ſurface, ſo that it may be compared to a hen's tail with the underſide turned uppermoſt. This bird is the ſize of a cuckoo.

THE FLYCATCHERS

ARE with us ſummer birds only, and take their name from feeding upon inſects. The *Spotted Flycatcher*, however, eats fruit, and is, on that account, called in Kent, the cherry-ſucker. It is, in general, of a mouſe-colour, the head ſpotted with black, and the wings and tail edged with white. The *Pied Flycatcher* is leſs than a hedge-ſparrow, and is known by a white ſpot on the forehead.

The *Fantailed Flycatcher* is a native of New Zealand. It is about the ſize of the bearded tit-mouſe, may be eaſily tamed, and will ſit on any perſon's ſhoulder to pick off the flies. The whole head is black, with a white collar; the upper parts of the body olive brown; the under parts yellowiſh nut colour, and the tail white, except the two middle feathers, which are black.

THE TROPIC BIRD.

THIS includes only three known ſpecies, which are all diſtinguiſhed by a wedge-like tail, the two middle feathers extending a vaſt length beyond the others.

The *Common Tropic Bird* is about the ſize of a widgeon. The length to the tip of the two long feathers is nearly three feet. The bill is three inches long, and red. The head, neck, and under parts of the body, are quite white. The upper parts of the plumage white alſo, but marked with black lines. The two middle feathers of the tail meaſure twenty inches, and project fifteen inches beyond the reſt. It takes its name from being chiefly found within the tropics. It frequently flies very high, but generally attends upon the flying fiſh in their eſcape from their watery enemies; and they have now and then been found in calm weather ſupinely floating on the backs of the drowſy tortoiſes.

tortoiſes. Their fleſh is not good, but is ſometimes eaten by the hungry ſailors.

On the Palmerſton iſland there is a black billed tropic bird; and at Mauritius there is a tropic bird with a bill and tail of a beautiful roſe colour.

THE DARTER.

ALL the birds of this kind are diſtinguiſhed by a peculiar long and ſlender neck.

The *white-bellied Darter* is ſcarcely ſo large as a mallard, but its neck is ſo long that it meaſures not leſs than two feet ten inches. The bill is three inches long, ſtraight and pointed. The neck is covered with downy ſoft feathers, of a reddiſh grey; the upper parts of the plumage are duſky black, daſhed with white; the under parts pure ſilvery white. It is a native of Braſil, and is extremely expert at catching fiſh.

The

The *black-bellied Darter* is the ſize of the common duck. The head, neck, and breaſt, are light brown. The back, ſcapulars, &c. marked with ſtripes of black and white. The quill-feathers, belly, thighs, and tail are deep black. The four toes are united like thoſe of the cormorant. In the iſlands of Ceylon and Java it ſits on the ſhrubs that hang over the water, and in a country where people are ſo apprehenſive of ſerpents, it often terrifies the paſſenger, by darting out its long and ſlender neck, which in their ſurpriſe they miſtake for the attack of ſome fatal reptile.

OF FISH.

THE PHYSIOLOGY AND STRUCTURE OF FISH.

MATHEMATICIANS have computed that the ſurface of the terreſtrial globe contains one hundred and ninety-nine millions and a half of ſquare miles; that the ſea is in proportion to the land as 155,5 to 55; conſequently that it occupies nearly three fourths of the whole ſurface, or, in round numbers, one hundred and forty nine millions of miles.

This immenſe and almoſt unknown ſpace contains myriads of creatures, to whoſe very form we are almoſt ſtrangers, and of whoſe diſpoſitions and manners we are ſtill more ignorant. Curioſity has indeed drawn ſome, and neceſſity more from the boſom of their retreat, and ſhewn us that they differ eſſentially from every other part of animated nature; but of their peculiarities our information is equally limited and inaccurate.

An

An extraordinary degree of divine wiſdom is obſervable in the ſtructure of fiſh, and in their conformation to the element in which they are to live. Moſt of them have the ſame external form, ſharp at each end, and ſwelling in the middle, by which configuration they are enabled to traverſe the watery element with greater eaſe and ſwiftneſs. From their ſhape men have taken the idea of thoſe veſſels which are intended to ſail with the greateſt ſpeed; but the progreſs of the ſwifteſt ſailing ſhip, with the advantage of a favourable wind, is far inferior to that of fiſh:—Ten or twelve miles an hour is no ſmall degree of rapidity in the ſailing of a ſhip; yet any of the larger ſpecies of the watery tribe would ſoon overtake her, play round as if ſhe did not move, and even advance conſiderably before her.

As the progreſſion of fiſh is performed in a different way from that of fowls or quadrupeds, they require neither anterior nor poſterior extremities, but are provided with machines, conſiſting of a number of elaſtic beams, connected by firm membranes, and with a tail of the ſame texture. Their tails are ſo framed as to contract to a narrow ſpace when drawn together

ther to either ſide, and to expand when drawn to a ſtrait line with their bodies:—thus by the aſſiſtance of this broad tail, and the fins on their ſides, they make their progreſſion much in the ſame way as a boat with oars on its ſides, and a rudder at its ſtem.

The FINS of fiſh are denominated from their ſituations.

The *pectoral* are placed at a little diſtance behind the opening of the gills, and are large and ſtrong, and ſerve as well to balance the body as to aſſiſt the motion of the fiſh.

The *ventral* are placed towards the lower part of the body, under the belly, and ſerve chiefly to raiſe or depreſs the fiſh in the water.

The *dorſal* is ſituate on the ridge of the back, and is very large in flat fiſh: its uſe, like the pectoral ones, is to keep the body in equilibrio, as well as contribute to its progreſſive motion.

The *anal* fin is placed between the vent and the tail, enabling the fiſh to keep an upright poſition.

The FINS in ſome are much more numerous than in others;—a fiſh completely fitted for ſwimming with rapidity is generally furniſhed

with two pair on the ſides, and three ſingle ones, two above and one below; yet it does not always happen that the fiſh which has the greateſt number of fins is the ſwifteſt ſwimmer. The ſhark is thought to be one of the ſwifteſt, and yet has no fins on his belly, while the haddock ſeems more completely fitted for motion, and yet does not move ſo quickly.

The chief uſe of the fins ſeems indeed for the purpoſe of keeping the body *in equilibrio*:--- the fins are cut off, the fiſh can ſtill ſwim, but will turn upon its ſides or its back, without being able to keep itſelf in an erect poſture as before. When the fiſh is in a ſtate of repoſe, it ſpreads all its fins, and ſeems to reſt upon the *pectoral* ones, or thoſe near the gills, and the *ventral*, or belly fins, near the bottom; it has the power of folding up its pectoral fins, and by that means inclining to the ſide on which the fin is folded. To produce a retrograde motion, the pectoral fins are ſtruck in a contrary direction. If the creature deſires to turn, a blow from the tail ſends it about in an inſtant; but if the tail ſtrikes both ways, then the motion is progreſſive. And it is obſervable, that ſome fiſh that have no fins at all, ſuch as lobſters, dart forward with prodigious rapidity by means of

of their tail, which is now found to be the inſtrument of progreſſive motion in all the aquatic ſpecies; and when the tail is cut off, the fiſh loſes all motion, and gives itſelf up entirely to the impulſe of the water.

Fiſh are alſo, in general, furniſhed with a ſlimy glutinous matter, which defends their bodies from the immediate contact of the ſurrounding fluid, and which, likewiſe, in all probability, aſſiſts their motion through the water. Beneath this, in many kinds, is found a ſtrong covering of ſcales, that like a coat of mail, defends it yet more powerfully; and under that, before we come to the muſcular parts of the body lies an oily ſubſtance, which alſo tends to preſerve the requiſite warmth and vigour. The ſcales of this cuticle are laid on one another like tiles on a building, and the uſe of which is analogous to the hair, wool, feathers, &c. of other animals; and below which may be diſcovered their proper *cuticula* and *cutis*.

Though fiſh are formed for living entirely in the water, yet they cannot ſubſiſt without air. On this ſubject Mr. *Hawkſbee* made ſeveral experiments, which are recorded in the philoſophical tranſactions. The fiſh he

employed were gudgeons; a ſpecies that are very lively in the water, and can live a conſiderable time out of it. Three of them were put into a glaſs veſſel, with about three pints of freſh water, which was deſigned as a ſtandard to compare the others by. Into another glaſs, to a like quantity of water, were put three more gudgeons, and thus the water filled the glaſs to the very brim. Upon this he ſcrewed down a braſs plate with a leather below to prevent any communication between the water and the external air, and, that it might the better reſemble a pond frozen over, he ſuffered as little air as poſſible to remain on the ſurface of the water. A third glaſs had the ſame quantity of water put in it, which, firſt by boiling, and then by continuing it a whole night in *vacuo*, was purged of its air as well as poſſible; and into this alſo were put three gudgeons. In about half an hour, the fiſh in the water from whence the air had been exhauſted, began to diſcover ſome ſigns of uneaſineſs, by a more than ordinary motion in their mouths and gills. Thoſe that had no communication with the external air, would at this time alſo frequently aſcend to the top, and ſuddenly ſwim down again: and in this ſtate they continued for a

conſiderable

conſiderable time, without any ſenſible alteration. About five hours after this obſervation, the fiſh in the exhauſted water were not ſo active as before, upon ſhaking the glaſs which contained them. In three hours more, the included fiſh lay all at the bottom of the glaſs with their bellies upwards; nor could they be made to ſhake their fins or tail by any motion given to the glaſs. They had a motion with their mouths, however, which ſhewed that they were not perfectly dead. On uncovering the veſſel which contained them, they revived in two or three hours, and were perfectly well next morning; at which time thoſe in the exhauſted water were alſo recovered. The veſſel containing theſe laſt being put under the receiver of an air-pump, and the air exhauſted, they all inſtantly died. They continued at top, while the air remained exhauſted, but ſunk to the bottom on the admiſſion of the atmoſphere.

The *gills* of fiſh are generally ſuppoſed to be aſſigned for an operation ſomewhat ſimilar to that of the lungs in other animals; their motion is very analogous to our breathing; yet the uſe of air to theſe creatures is difficult to be aſſigned; and the means of obtaining what they want is not eaſily to be accounted for,

for, or rendered intelligible. The following is however the general explanation of this phenomenon.

The fiſh firſt take a quantity of water into their mouth, which is driven into the gills; theſe cloſe and keep the water which is ſwallowed from returning by the mouth, while the bony covering of the gills prevents it from going through them, until the animal has drawn the proper quantity of air from it; then the bony covers open, and give it a free paſſage, by which means alſo the gills are again opened, and admit a freſh quantity of water. If the fiſh is prevented from the free play of its gills, it ſoon falls into convulſions, and dies.

This appears a pretty plauſible explanation of the reſpiration of fiſh; yet it ſtill remains a difficulty not eaſy to be ſolved, what is done with this air? There ſeems to be no receptacle for containing it, except the air-bladder or ſwim, which many modern philoſophers are of opinion is only to enable the fiſh to riſe or ſink at pleaſure, and not deſtined to anſwer any vital purpoſe.

The air-bladder is a veſicle found in the bodies of all ſpinous, or bony fiſh, though not in thoſe of the cartilaginous or cetaceous kind, ſituated

ſituated towards the back of the fiſh, opening to the maw or gullet, and compoſed of one, two, or three diviſions. It is thought that the animal poſſeſſes a power of diſtending or contracting this bladder, and of conſequence becoming ſpecifically lighter or heavier than the fluid in which it ſwims, and thence to riſe to the top, or ſink to the bottom of the water at pleaſure; and that ſuch is its uſe, ſeems deducible from the following experiment:

A carp being placed in an air-pump, and the air exhauſted, the fiſh ſoon ſwelled to ſuch a degree that his eyes ſtarted from his head, and the bladder burſt by its expanſion. The carp continued to live on being thrown into water, but was unable afterwards to riſe to the top. The ſame circumſtances are conſequent upon any prick or wound of the bladder by which the air may eſcape; for in ſuch caſes the fiſh continues to crawl at the bottom. And ſuch animals as river cray-fiſh, oyſters, lobſters, crabs, &c. that never quit the bottom of the water, are found deſtitute of any air-bladder.

On the other hand;—that this veſicle does not merely ſerve for the purpoſe of varying the ſpecific gravity of fiſh, but for ſome purpoſes eſſentially neceſſary to life, is an opinion generally

rally entertained by the ancient philoſophers. Dr. Prieſtley alſo conjectures that they may ſerve ſome other intentions in the animal economy, beſides that of the raiſing or depreſſing of the fiſh.

Among the many arguments on this ſide of the queſtion, the moſt concluſive is, that all the cartilaginous kind of fiſh want air-bladders, and yet they riſe to the top, or ſink to the bottom without any difficulty; and alſo, that though moſt of the eel-kind have air-bladders, yet they cannot raiſe themſelves in the water without great difficulty.

On this ſubject of the *air*, or *ſwimming-bladder*, Dr. Munro has ſtated ſome intereſting facts:---It has long been known, ſays he, that in the flat fiſh there is no ſwimming-bladder. and in a few long-ſhaped fiſh, as in the mackerel, he has alſo found it wanting. It is likewiſe known, that in many fiſh the air bag communicates by a duct with the œſophagus. On examining this matter, he found in a ſturgeon a round hole, nearly an inch in diameter in the upper and back part of the ſtomach, by which it communicates with a very large air-bag.

In the ſalmon, he found a hole ſo large as to admit readily the largeſt ſize gooſe-quill, leading directly through the coats of the œſopha-

gus

gus into the air-bag; and if, as in the carp, there are two air-bags, the duct leads to the poſterior bag, from which there is a paſſage into the anterior. From theſe circumſtances he concludes, that the air found in the ſwimming bladder, paſſes into it through the abovementioned ducts, and they ſeem well ſuited for this purpoſe; for as in the common horizontal ſituation of the fiſh, their beginning is at the upper part of the ſtomach, it is eaſy to conceive that the air which they take in at their mouth, when they aſcend, or that which may by ſome more latent proceſs be diſengaged from the water, is applied to the ducts; and that the fiſh, by an inſtinct of nature, diſtinguiſhes the irritation of air from that of water, and propels the air into the air-bag, but excludes the water.

But in the cod and haddock, though the air-bag is very large, and its ſides remarkably ſtrong, yet the Doctor was not able to diſcover any communication of it with the mouth, œſophagus, ſtomach, or inteſtines. The air-bag was not enlarged by blowing into the alimentary canal, nor could it be emptied without burſting it.

Further, on the inner ſide of the air-bag of the cod, haddock, &c. was found a red coloured organ, the ſurface of which is very extenſive, compoſed of a vaſt number of leaves or membranes doubled; but in thoſe fiſh where the air-bag communicates with the alimentary canal, this red body is either very ſmall and ſimple in its ſtructure, as in the conger eel, or entirely wanting, as in the ſturgeon, ſalmon, carp, &c. Hence, he thinks it reaſonable to ſuppoſe, that the air may be ſecreted from this red body, ſomewhat in the ſame way it ſeems to be ſecreted into the ſwimming bladders of aquatic plants, or perhaps into the air-bag of the egg of a bird as the chick grows. Though perhaps many readers will rather be of opinion, that the cod, haddock, &c. has an air-duct which has yet eſcaped obſervation.

But what is the uſe of the red body? does it, like the gills, receive ſomewhat uſeful, or diſcharge ſomewhat hurtful to the animal? or, are we to ſuppoſe that the air-bag not only ſerves to render the body of the fiſh ſpecifically lighter, but alſo that the air received into it is of benefit to the conſtitution, by adding ſomewhat uſeful, or taking away ſomewhat noxious?

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In all the fiſh which fell under the diſſection of Dr. Monro, he found the heart to conſiſt of but one auricle and one ventricle; and that from the latter one artery is ſent out, which is entirely ſpent on the gills. That from the gills, therefore, the returning blood paſſes to all the other parts of the body, without the intervention of a ſecond auricle, as in man. From his obſervations and experiments, the Doctor concludes, that the circulation of the blood being carried on the cartilaginous fiſh in the ſame manner as in the cetaceous and boney, and the whole maſs of blood paſſing through their gills, they muſt breathe, or they cannot poſſeſs the *pulmo arbitrarius*, which naturaliſts have aſſigned to them.

From the circumſtance of very large and numeous lymphatics being diſperſed upon the gills of the ſcates, and the additional one that fiſh ſoon die when put into water from which the air has been extracted, and yet that ſuch water is capable of waſhing off exhaled matter from the gills, and of taking up phlogiſton readily, Dr. Monro is led to ſuppoſe that the gills or lungs not only diſcharge hurtful matter, but ſerve alſo to take in from the air, which is mixed with the water *ſomewhat* neceſſary for

life, the preciſe nature of which experiments do not yet enable us to ſpecify.

Many naturaliſts ſeem inclined to place the aquatic race of beings in a very inferior ſcale of importance, on the ſcore of animal faculties, to either quadrupeds or birds. Their ſenſe of FEELING, ſay ſuch writers, muſt be very *obſcure*, on account of the ſcaly coat of mail in which they are wrapped;—but in reply it may be ſaid, that even theſe ſcales may be endued with as great or nice a power of ſenſation as we can imagine; for the ſenſe of feeling is not properly connected with *ſoftneſs* in any organ, more than with *hardneſs* in it.

A ſimilar argument may be uſed with regard to SMELLING;—we know not, indeed, how ſmells can be propagated in water, yet is that by no means a proof that they are not ſo: on the contrary, as water is found to be capable of abſorbing putrid affluvia from the air, nothing is more probable than that theſe putrid effluvia, when mixed with the water, may affect the olfactory organs of fiſh, as well as they affect ours when mixed with the air. But this idea is carried farther by a very eminent naturaliſt, who aſſerts that, "The olfactory organ in fiſh is large, and they have a power of dilating and

and contracting the paſſage as occaſion requires. It is chiefly by their acute ſmell that they diſcover their food; and their ſight appears to be of leſs uſe than that ſenſation in ſearching for their nouriſhment. If a freſh worm be thrown into the water, a fiſh ſhall diſtinguiſh it at a conſiderable diſtance; and that this is not alone by the eye is plain, from obſerving, that after the ſame worm has been a conſiderable time in the water, and loſt its ſmell, no fiſh will come near it; but if the worm be now taken out, and a few ſmall inciſions made into it, in order to tranſmit freſh effluvia, the former effect will take place. For it is ſuppoſed that had the creatures diſcovered the bait with their eyes, they would have come equally to it in both caſes."

In conſequence of ſmell being the principal means that fiſh have of diſcovering their food, we may frequently obſerve their allowing themſelves to be carried down with the ſtream that they may leiſurely re-aſcend againſt the current of the water; thus the odoriferous particles ſwimming in that medium being applied more forcible to their olfactory organ, produce a ſtronger ſenſation.

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The capacity of diſtinguiſhing TASTES has been alſo, by the ſame writers, denied to the objects of this diviſion of animated nature. The *palate* of moſt fiſh, they ſay, is hard and bony, conſequently incapable of the powers of reliſhing different ſubſtances; and, accordingly, the voracious part of theſe animals have often been obſerved to ſwallow the fiſherman's plummet inſtead of the bait. Indeed, no voracious animals ſeem to be endued with much ſenſibility in this reſpect, nor would it be probably conſiſtent with that way of promiſcuouſly devouring every creature that comes within its reach, without which they would not be able to ſubſiſt; though certainly the other kinds are as well able to diſtinguiſh their proper food from what is improper, as other animals.

Of the ſenſes that have *touching* and *taſte* for their object, there can be little room for remark: in all fiſh, however, external openings for *ſmell* are very evident, generally on each ſide in the oſſeous fiſh, and which on each ſide of the head lead to a complex organ, the ſurface of which is of conſiderable extent, and upon a pair of large or olfactory nerves terminate. In ſome fiſh, as the haddock, the olfactory

factory nerve, ſays Dr. Monro, in its courſe between the head and noſe, paſſes through a cineritious ball, reſembling the cineritious or aſhes-like matter connected in our body to the olfactory nerve within the cranium. He therefore infers, that there can be no doubt that they enjoy the ſenſe of *ſmelling:* but there is great reaſon to believe, that ſuited to their ſurrounding element, they are much more ſenſible of odorous bodies diſſolved in water, and applied by its medium, than we ſhould be, if the application of the object was to be made to our organs of ſmell by the ſame medium.

The brain of fiſh is ſenſibly ſmaller in proportion to their bodies than in quadrupeds or birds; yet the nerves it ſends off are as large, in proportion to the ſeveral organs, as in thoſe two claſſes. In it is found the like principal diviſion into brain and cerebellum; and theſe are hollow, and have ventricles within them.

The arguments againſt the SIGHT of fiſh, are the weakeſt of all: daily inſtances occur to ſhew us that fiſh have a very acute ſight, not only of objects in the water, but alſo of thoſe in the air: their jumping out of the water to catch flies is an abundant proof of this; and they will continue to do this in a fine ſummer evening.

evening, even after it is ſo dark that we cannot diſtinguiſh the inſects they attempt to catch.

Dr. Monro, whoſe experiments and obſervations tend to eſtabliſh the perfection of ſight in fiſh, remarks that the humours of the eyes of theſe creatures are proportionally in greater quantity, or much larger than thoſe of animals living in air; the eye of the cod being nearly of the ſame weight and depth, and its axis of the ſame length as the eye of the ox.

The primary uſe of the almoſt completely ſpherical figure of the cryſtalline lens of fiſh, or great convexity, eſpecially of the anterior part of their lens, which the Doctor found to project in the cod about ſeven-fortieths of an inch beyond the iris, is to take a large field of the objects around them, which was particularly neceſſary, as the motion of their neck is inconſiderable.

To enable them with the ſame length of the axis of the eye as in the quadruped, to collect into a focus on the retina, the rays of lights coming from the denſe medium of the water, four chief circumſtances concur:

In the firſt place we obſerve that their cryſtalline lens is more convex, or compoſed of portions of ſmaller ſpheres than in land animals.

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In the next place we have found that their cryſtalline lens is, in correſponding parts, much more denſe than in animals which live in air.

Thirdly, that the lens in fiſh poſſeſſes power of refracting light far beyond what has been calculated by authors, who have proceeded on the ſuppoſition that powers were proportioned nearly to its ſpecific gravity.

In the laſt place, the vitreous humour of fiſh being lighter than that of land animals, the rays of light iſſuing from their lens will be refracted in a greater degree, or brought ſooner to a focus.

It has been thought by ſome naturaliſts, that fiſh are totally deſtitute of hearing: on the other hand, it is urged, that when kept in a pond, they may be made to anſwer at the call of a whiſtle, or the ringing of a bell; that they appear terrified, and ſink to the bottom of the water upon any ſudden noiſe, as thunder, or the firing of guns. Moſt of the ancients were of opinion that fiſh had the ſenſe of hearing, though they by no means could aſcertain the auditory paſſage, or determine the matter by experiment. Ariſtotle, Scaliger, Nierembergius, Geoffrey, and Johnſon, are of the ſame

opinion; and Dr. George Serger, author of a diſſertation on this ſubject, in the German Ephemerides, ſays, that having been to take a walk with ſome of his friends in the fine gardens of the Archbiſhop of Saltzburg, the gardener conducted them to a very clear piece of water, of which the bottom was paved with ſtones of different colours, and in which they did not at firſt ſee any fiſh; but the man had no ſooner rung a little bell, than a multitude of trouts came together from all parts of the pond, to take what the gardener had brought them, and diſappeared as ſoon as they had eat it up. The gardener aſſured his company that he always did the ſame, whenever he had a mind to give them any thing to eat. Having continued to walk about the garden half an hour longer, and returning to the pond, they had again the pleaſure of ſeeing all the trouts re-aſſemble at the ringing of the bell.

Geoffrey, in his *Diſſertation ſur l'Organe de l'Ouie*, gives a particular deſcription of the organs of hearing belonging to ſeveral ſpecies: nor can it be thought that water is an improper medium of ſound, as daily experience ſhews us, that ſouuds may be conveyed not only through water, but through the moſt ſolid bodies.

dies. We ſhall terminate the diſcuſſion of this matter by ſome extracts from the writings of two of the moſt diſtinguiſhed anatomiſts and naturaliſts of our times, Doctors Monro and Hunter.

Dr. Monro had an opportunity of diſſecting one of the cetaceous diviſion, namely, the *phocæna*; and after a very nice anatomical inveſtigation, obſerves, in regard of the hearing of fiſh, "that while they float upon the ſurface of the ocean, impreſſion is made on the ſeveral parts of their ear in the ſame manner as in man.

It has been proved by experiments that ſounds are convoyed through water almoſt with the ſame facility with which they move through air. A bell rung in water returns a tone as diſtinct as if rung in air. Derham obſerved that it came a quarter deeper. Naturaliſts in general had believed that fiſh had a ſtrong perception of ſounds at the bottom of deep rivers; but the anatomical reſearches of the above gentlemen clearly demonſtrate the auricular organ in theſe animals:—Monro's experiments, made in 1780, to judge of the effect of ſounds in water, are curious.

For this purpoſe, he employed two bells, the ſounds of which he was uſed to; one of them a ſmall tea-table bell, the other much larger and thicker, ſo that the ſound of it could be very well heard at the diſtance of a quarter of a mile. When theſe were plunged under water and rung, he obſerved that the ſound of them was very ſenſibly graver; but ſtill the ringing tremor of both was very diſtinguiſhable. On performing an accurate experiment, the tea-table bell was found in air the higheſt *G* of a harpſichord; but in water it ſounded a fifth falſe lower, or it ſounded the *C* ſharp under the *G*.

He next plunged his head under the water while he rung the bell in the air, and heard the ſound of it diſtinctly. As the tone of the bell is louder and more acute in the air than in the water, its ſound is neceſſarily better heard when the head of the perſon making the experiment is under the water and the bell above it, than when the bell is rung under the water while the head is above it.

The Doctor next plunged his whole body with the bells, holding their handles in his hands, under the water, and then rung them, and

and was ſurpriſed with the loudneſs and diſtinctneſs of their ſounds, and could readily diſtinguiſh their different tones.

In like manner, when plunged under the water, he ſtruck two ſtones held in his hands againſt each other, and was ſurpriſed with the ſhock communicated to the ears.

This experiment confirms Dr. Franklin's opinion, "That water will convey ſound farther and more readily than air. He thinks he has heard a ſmart ſtroke of two ſtones together under water, his ear being alſo under water in the ſame river, near a mile: how much farther it may be heard he knows not, but ſuppoſes a great deal farther, becauſe the ſound did not ſeem faint, as if at a diſtance, like diſtant ſounds through the air, but ſmart and ſtrong, as if preſent juſt at the ear."

Our author, afterwards, by means of a ſtring tied to the handle of the largeſt bell, and to an inflated bladder, ſuſpended that bell in a very deep pool, ſix feet under the ſurface of the water, and took hold of a cord twelve yards long, which he had previouſly tied to the handle. He then plunged under the water and pulled the cord, and found the ſound was inſtantly conveyed to his ears.

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He, in the laſt place, thought of trying an experiment, to determine whether air or water conveyed ſound quickeſt; but there being no lake near Edinburgh about 800 feet broad, he found it impoſſible, independently of the difficulty of conſtructing a proper apparatus, to perform the experiment in a ſatisfactory and deciſive way. He, however, made the following experiment. He charged three Engliſh pint bottles each with about ten ounces of gunpowder. He then inſerted a tin tube four feet in length into each bottle, and prevented the water from getting into the bottle by wrapping a piece of wet bladder round the neck of it and the neck of the tube which entered into it, and tying the tube and neck of the bottle to each other. After filling the tube with gunpowder, he fixed to the top of it a piece of match paper; and into the match paper, juſt over the top of the tube, he put two ounces of gunpowder.

He then ſunk the bottle near the ſide of a lake to the depth of about two feet, and went into the water at the greateſt diſtance poſſible, which was about 800 feet, and laid himſelf on his back in the water, with his ears under its ſurface, and noſe and eyes above it. The match

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was then ſet fire to by another perſon; and as it was midnight, he ſaw the flaſh of the gunpowder contained within the match, and ſoon after heard the noiſe of the exploſion of the gunpowder within the bottle. But he found it impoſſible in this way to determine the velocity of the ſound with accuracy, as the gunpowder in the bottle was not ſet fire to through the tube ſo inſtantaneouſly as was expected.

For want of being provided with a proper apparatus, the piece of water not being of ſufficient extent, and the experiment too ſeldom repeated, the only concluſion the profeſſor could draw, was, that after the bottle burſt, he heard one, but did not hear two exploſions; ſo that the water ſeemed to convey the ſound nearly in the ſame manner as the atmoſphere.

The organs of hearing in fiſh are very minutely deſcribed by J. Hunter, F.R.S.—They are, he obſerves, placed on the ſides of the ſkull, or that cavity which contains the brain; but the ſkull itſelf makes no part of the organ, as it does in the quadruped and the bird. In ſome fiſh, this organ is wholly ſurrounded by the parts compoſing this cavity, which in many is cartilaginous; the ſkeleton of theſe fiſh being like thoſe of the ray kind; in others alſo, as

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in cod, ſalmon, &c. whoſe ſkeleton is bone, yet the part is cartilaginous.

In ſome fiſh this organ is in part within the cavity of the ſkull, or that cavity which alſo contains the brain, as in the ſalmon, cod, &c. the cavity of the ſkull projecting laterally, and forming a cavity there.

The organ of hearing in fiſh appears to grow in ſize with the animal, for its ſize is nearly in the ſame proportion with the ſize of the animal, which is not the caſe with the quadruped, &c. the organs being in them nearly as large in the growing fœtus as in the adult.

It is much more ſimple in fiſh than in all thoſe orders of animals who may be reckoned ſuperior, ſuch as quadrupeds, birds, and amphibious animals, but there is a regular gradation from the firſt to fiſh.

It varies in different orders of fiſh; but in all it conſiſts of three curved tubes, all of which unite with one another: this union forms in ſome only a canal, as in the cod, ſalmon, ling, &c. and in others a pretty large cavity, as in the ray kind. In the jack there is an oblong bag, or blind proceſs, which is an addition to thoſe canals, and which communicates with them

them at their union. In the cod, &c. that union of the three tubes ſtands upon an oval cavity, and in the jack there are two of thoſe cavities; theſe additional cavities in theſe fiſh appear to anſwer the ſame purpoſe with the cavity in the ray or cartilaginous fiſh, which is the union of the three canals.

The whole is compoſed of a kind of cartilaginous ſubſtance, very hard or firm in ſome parts, and which in ſome fiſh is cruſted over with a thin bony lamella, ſo as not to allow them to collapſe: for as the ſhell does not form any part of theſe canals or cavities, they muſt be compoſed of ſuch ſubſtance as is capable of keeping its form.

Each tube deſcribes more than a ſemicircle. This reſembles in ſome reſpect what we find in moſt animals, but differs in the parts being diſtinct from the ſkull.

Two of the ſemicircular canals are ſimilar to one another, may be called a pair, and are placed perpendicularly; the third is not ſo long; in ſome it is placed horizontally, uniting as it were the other two at their ends or terminations. In the ſkate it is ſomething different, being only united in one of the perpendiculars.

The two perpendiculars unite at one part in one cavity, by one arm of each uniting, while the other two arms or horns have no connection with each other, and the arms of the horizontal unite with the other two arms of the perpendicular near the entrance into the common canal or cavity.

Near the union of thoſe canals into the common, they are ſwelled out into round bags, becoming there much larger.

In the ray kind they all terminate in one cavity, as has been obſerved; and in the cod they terminate in one canal, which in theſe fiſh is placed upon the additional cavity or cavities. In their cavity or cavities there is a bone or bones. In ſome there are two bones, as the jack has two cavities, we find in one of thoſe cavities two bones, and in the other only one; in the ray there is only a chalky ſubſtance. At this union of the two perpendiculars in ſome fiſh enters the external communication, or what may be called the external means. This is the caſe with all the ray kind, the external orifice of which is ſmall, and placed on the upper flat ſurface of the head; but it is not every genus or ſpecies of fiſh that has the external opening.

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The nerves of the ear paſs outwards from the brain, and appear to terminate at once on the external ſurface of the ſwelling of the ſemicircular tubes above deſcribed. They do not appear to paſs through thoſe tubes ſo as to get on the inſide, as is ſuppoſed to be the caſe in quadrupeds; I ſhould therefore very much ſuſpect that the lining of thoſe tubes in the quadruped is not nerve, but a kind of internal perioſteum.

It may after all be reaſonably queſtioned whether every ſpecies of fiſh be endued with the organs of hearing, eſpecially thoſe which are deprived of eyes, as oyſters, muſcles, and all teſtaceous fiſh with hard ſhells. For though in ſome inſtances they contract and ſhut themſelves up within their cells, this ſeems to be operated leſs by hearing than the ſentiment of touch, excited by the agitation of the water.

The teeth of fiſh are not calculated for breaking the food into ſmall morſels, but rather to graſp their prey, and hinder the creatures they have once caught from eſcaping again; they feed chiefly on ſmaller fiſh, or other animals that need no trituration in the mouth, but ſpontaneouſly and gradually diſſolve into a liquid

chyle; there are alſo two round bodies in the poſterior part of the jaws, which, as well as the baſis of the *bronchi*, have a number of tenter-hooks fixed in them in ſuch a manner, as that any thing can eaſily get down, but is hindered from getting back.

As theſe creatures have nothing that can be called a *neck*, the œſophagus, or gullet, is of courſe very ſhort, and ſcarcely diſtinguiſhed from the ſtomach; for in fact the food lies equally in both.

The ſtomach is of an oblong figure; which, in large fiſh, is commonly found to contain ſome ſmaller ones, ſtill retaining their natural form, but when touched melting down into a jelly. From this, and the great quantity of liquors poured into their ſtomachs, is concluded that digeſtion is ſolely brought about in them by the power of a menſtruum, and that no trituration happens here. The guts are very ſhort, making only three turnings, the laſt of which ends in the common cloaca for the feces, urine, and ſemen, ſituated about the middle of the inferior part of the body.

Fiſh are remarkable for their longevity. "Moſt of the diſorders incident to mankind (ſays Bacon) ariſe from the changes and alterations

rations in the atmoſphere ; but fiſh reſide in an element little ſubject to change ; theirs is an uniform exiſtence ; their movements are without effort, and their life without labour. Their bones alſo, which are united by cartilages, admit of indefinite entenſion ; and the different ſizes of animals of the ſame kind, among fiſh, are very various. They ſtill keep growing ; their bodies, inſtead of ſuffering the rigidity of age, which is the cauſe of the natural decay of land animals, ſtill continue increaſing with freſh ſupplies ; and as the body grows, the conduits of life furniſh their ſtores in greater abundance. How long a fiſh, that ſeems to have ſcarce any bounds put to its growth, continues to live, is not aſcertained : perhaps, the life of a man would not be ſufficient to meaſure that of the ſmalleſt." There have been two methods fallen upon for determining the age of fiſh ; the one is by the circles of the ſcales ; the other is by the tranſverſe ſection of the back bone. When a fiſh's ſcale is examined by a microſcope, it is found to conſiſt of a number of circles one within another, in ſome meaſure reſembling thoſe which appear on the tranſverſe ſection of a tree, and is ſuppoſed to give the ſame information. For,

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as in trees, we can tell their age by the number of their circles; ſo, in fiſh, we can tell theirs by the number of circles in every ſcale, reckoning one ring for every year of the animal's exiſtence. The age of fiſh that want ſcales may be known by the other method, namely, by ſeparating the joints of the backbone, and then minutely obſerving the number of rings which the ſurface, where it was joined, exhibits.

Fiſh are, in general, the moſt voracious animals in nature. In moſt of them, the maw is placed next the mouth; and, though poſſeſſed of no ſenſible heat, is endowed with a very ſurpriſing faculty of digeſtion. Its digeſtive power ſeems, in ſome meaſure, to increaſe in proportion to the quantity of food with which the fiſh is ſupplied. A ſingle pike has been known to devour 100 roaches in three days. Whatever is poſſeſſed of life ſeems the moſt deſirable prey for fiſh. Some have but very ſmall mouths, feed upon worms, and the ſpawn of other fiſh; others, whoſe mouths are larger, ſeek large prey; it matters not of what kind, whether of their own ſpecies, or any other. Thoſe with the largeſt mouth purſue almoſt every thing that hath life; and often meeting

meeting each other in fierce oppoſition, the fiſh with the largeſt ſwallow comes off victorious, and devours its antagoniſt. As a counterbalance to this great voracity, however, fiſh are incredibly prolific. Some bring forth their young alive, others produce only eggs: the former are rather the leaſt fruitful; yet even thoſe produce in great abundance. The viviparous blenny, for inſtance, brings forth 200 or 300 at a time. Thoſe which produce eggs, which they are obliged to leave to chance, either on the bottom where the water is ſhallow, or floating on the ſurface where it is deeper, are all much more prolific, and ſeem to proportion their ſtock to the danger there is of conſumption. Lewenhoeck aſſures us that the cod ſpawns above nine millions in a ſeaſon. The flounder commonly produces about one million, and the mackarel above 500,000. Scarce one in 100 of theſe eggs, however, brings forth an animal: they are devoured by all the leſſer fry that frequent the ſhores, by water-fowl in ſhallow waters, and by the larger fiſh in deep waters. Such a prodigious increaſe, if permitted to come to maturity, would overſtock nature; even the ocean itſelf would not be able to contain, much leſs provide for,

one

one half of its inhabitants. But two wiſe purpoſes are anſwered by their amazing increaſe; it preſerves the ſpecies in the midſt of numberleſs enemies, and ſerves to furniſh the reſt with a ſuſtenance adapted to their nature.

Mr. Thomas Harmer having obſerved a very great difference in the accounts given by various writers of the fecundity of fiſh, ſet himſelf to aſcertain with exactneſs the number of eggs in a great variety, and communicated the reſult of his labour to the Royal Society.

He obſerved the ſize of the eggs to be nearly the ſame in great and ſmall fiſh of the ſame ſpecies; but that the number is in proportion to the animal.

In a Carp	203,109
In a Cod	5,686,760
In a Flounder	1,375,100
In a Herring	36,960
In a Lobſter	21,699
In a Mackarel	564,681
In a Perch	28,323
In a Pickrel	80,338
In a Prawn	3,806
In a Roach	81,586
In a Shrimp	6,807
In a Smelt	38,278
In a Soal	100,000
In a Tench	383,252

With

With reſpect to the generation of many kinds of fiſh, the common opinion is, that the female depoſits her ſpawn or eggs, and that the male afterwards ejects his ſperm, or male ſemen, upon it in the water. The apparent want of the organs of generation in fiſh gives probability to this; but it is ſtrenuouſly oppoſed by Linnæus. He affirms that there can be no poſſibility of impregnating the eggs of any animal out of its body. To confirm this, the general courſe of nature, not only in birds, quadrupeds, and inſects, but even in the vegetable world, has been called in to his aſſiſtance, as proving that all impregnation is performed while the eggs are in the body of its parent; and he ſupplies the want of the organs of generation by a very ſtrange proceſs, affirming, that the males eject their ſemen always ſome days before the females depoſit their ova or ſpawn; and that the females ſwallow this, and thus have their eggs impregnated with it. He ſays, that he has frequently ſeen, at this time, three or four females gathered about a male, and greedily ſnatching up into their mouths the ſemen he ejects. He mentions perch, and ſome of the *cyprini*, in which he had ſeen this proceſs.

But ſuch is the ſhyneſs of theſe creatures, that we cannot eaſily get to obſerve their way of copulation, and are conſequently but little acquainted with this part of their natural hiſtory. The apparent organs of generation are two bags ſituated in the abdomen, uniting near the podex. Thoſe in the male are filled with a whitiſh firm ſubſtance, called the *milt*; and in the female with an infinite number of little *ova*, cluſtered together, of a reddiſh yellow colour, called the *roe*. Both theſe, at ſpawning time, are very much diſtended; whereas, at another time, the male organs can ſcarcely be diſtinguiſhed from the female; nor is there any characteriſtic mark to aſcertain the ſex. It is generally ſuppoſed, that when the ova of fiſh are thrown out and depoſited in the ſand, the male is ready to impregnate them, and they are incubated by the heat of the ſun.

It is curious to remark with what care theſe creatures ſeek for a proper place to depoſit their ova, by ſwimming to the ſhallow, where they can better enjoy the ſun's rays, and ſhun the voracious jaws of larger fiſh. The river fiſh, again, ſpawn in ſome creek, free from the hazard of the impetuous ſtream. But whether

whether this mixture be brought about in fiſh by the ſimple application of the genitals to each other, or if both of them throw out their liquors at the ſame time in one place, and thus bring about the deſired mixture, it is not eaſy to determine.

In our hiſtory of fiſh, we ſhall purſue that order, or chain of connexion, which is ſo ſtrongly and firmly marked by Nature herſelf, and arrange them under the three grand diviſions of *Cetaceous*, *Cartilaginous*, and *Spinous*, all clearly differing from each other, as well in their conformation, as in their manners, habits, and appetites. This diviſion was originally framed by Ariſtotle, and has been adopted by the moſt rational naturaliſts, as well as by the bulk of mankind ever ſince.

1. CETACEOUS FISH:—the characters of which are, that they have no gills, have an orifice on the top of the head, through which they breathe and eject water, and a flat horizontal tail.

2. CARTILAGINOUS FISH;—characterized by their breathing through certain apertures leading to the gills, generally placed on each ſide of the neck, but in ſome inſtances beneath, in ſome above, and from one to ſeven in num-

ber on each part; the muſcles ſupported by cartilages, or *griſtles*, inſtead of bones.

3. Bony or Spinous Fish, includes thoſe which have their muſcles ſupported by bones, or ſpines, and which breathe through gills covered or guarded by thin bone plates, open on the ſide, and dilatable, or capable of being widened by means of a certain row of bones on their lower part, each ſeparated by a thin web, which bones are called the *gill-covering rays:* an invariable character.

This arrangement fully includes every ſpecies of marine animal, of whoſe exiſtence we can ſpeak with confidence or authority. Ariſtotle has indeed aſſerted that every thing exiſts which is poſſible to exiſt, or the exiſtence of which does not imply a contradiction; and it ſeems neither an impoſſibility nor a contradiction that there ſhould be a *marine animal of the human form*, which can live in the water as we do in the air; or even that this animal ſhould not have two legs, as we have, but ſhould end in a tail like a fiſh. Thoſe who are diſpoſed to ſet bounds to the works of the Deity, may diſpute the fact, but reaſoning men will not preſume to limit the operations of Omnipotence, ſuggeſted by infinite benevolence,

lence, or to deny the production of every ſenſitive being that is capable of receiving pleaſure, and of enjoying a happineſs ſuitable to its nature. However rare ſuch animals may be, or even ſhould they no longer exiſt, it does not from thence follow that they never exiſted: for the fact is well aſcertained, that there were once whole ſpecies of animals in various countries that are not now to be found there; and of this, the wolf is a trite and familiar inſtance in Great Britain.

It is generally believed that quadrupeds once exiſted much larger than we find them at preſent, ſince man has exerted his powers of deſtruction over the brute creation; powers which he has even extended into the midſt of the ocean, and cut off enormous animals that had perhaps exiſted for ages. The whales, once common in the Northern ſeas, are not leſs reduced in number than in magnitude. Two centuries ago, it is well known and atteſted, that they were often caught of the enormous length of two hundred and fifty feet, though they are now dwindled into a race of comparatively diminutive animals, from fifty to eighty; and even of this ſize they appear a wonderful maſs of animation:—And yet there may be animals

animals of much greater bulk concealed in the deep, and perhaps increaſing in magnitude for centuries which we have not had opportunities of exploring. The moſt ſeemingly fabulous accounts of the ancients, concerning ſea-monſters, are rendered credible by the productions of the Norwegian ſea; and the *ſea-ſnake*, or ſerpent of the ocean, is no longer counted a chimera. In 1756, ſay the hiſtorians of Norway, one of them was ſhot by a maſter of a ſhip; its head reſembled that of a horſe; the mouth was large and black, as were the eyes, a white mane hanging from its neck; it floated on the ſurface of the water, and held its head at leaſt two feet out of the ſea: between the head and neck were ſeven or eight folds, which were very thick; and the length of this ſnake was more than a hundred yards, ſome ſay fathoms. They have a remarkable averſion to the ſmell of caſtor: for which reaſon, ſhip, boat, and bark maſters provide themſelves with quantities of that drug to prevent being overſet; the ſerpent's olfactory nerves being remarkably exquiſite. The particularities related of this animal would be incredible, were they not atteſted upon oath. Egede (a very reputable author) ſays, that on the 6th day of July, 1734, a large and frightful

frightful ſea-monſter raiſed itſelf ſo high out of the water, that its head reached above the main topmaſt of the ſhip; that it had a long ſharp ſnout, broad paws, and ſpouted water like a whale; that the body ſeemed to be covered with ſcales; the ſkin was uneven and wrinkled, and the lower part was formed like a ſnake. The body of this monſter is ſaid to be as thick as a hogſhead: his ſkin was variegated like a tortoiſe-ſhell; and his excrement, which floats upon the ſurface of the water, is corroſive, and bliſters the hands of the ſeamen if they handle it.

"I ſhould be under a great difficulty, continues our Norwegian author, in mentioning the *kraken*, or *korven*, were not its exiſtence proved ſo ſtrongly, as ſeems to put it out of all doubt. Its bulk is ſaid to be a mile and a half in circumference; and when part of it appears above the water, it reſembles a parcel of ſmall iſlands and ſand-banks, on which fiſh diſport themſelves, and ſea-weeds grow; upon a farther emerging, a number of pellucid attennæ, each about the height, form, and ſize of a moderate maſt, appear; and by their action and re-action he gathers his food, conſiſting of ſmall fiſh. When he ſinks, which he does gradually, a dangerous ſwell of the ſea ſucceeds, and

and a kind of whirlpool is actually formed in the water. In 1680, a young kraken periſhed among the rocks and cliffs of the pariſh of Alſtahong; and his death was attended with ſuch a ſtench, that the channel where it died was impaſſable." Without entering into any romantic theories, we may ſafely ſay, that the exiſtence of this fiſh being proved, accounts for many of theſe phenomena of floating iſlands, and tranſitory appearances in the ſea, that have hitherto been held as fabulous by the learned, who could have no idea of ſuch an animal."

"To believe *all* that has been ſaid of the ſea-ſerpent, or kraken (ſays Goldſmith) would be credulity; to reject the probability of their exiſtence, would be preſumption."

Pontoppiddan, the learned Biſhop of Norway, ſays, the mer-men and mer-women hold their reſidence in the Norwegian ſeas, though I cannot give credit to all that is related of them by the natives. The mer-man is about eight ſpans long, and, undoubtedly, has as much reſemblance as an ape has to the human ſpecies; a high forehead, little eyes, a flat noſe, and large mouth, without chin or ears, characterize its head; its arms are ſhort, but without joints

or

or elbows, and they terminate in members reſembling a human hand, but of the paw kind, and the fingers connected by a membrane: the parts of generation indicate their ſexes; though their under parts, which remain in the water, terminate like thoſe of fiſh. The females have breaſts, at which they ſuckle their young ones.

To the inquiſitive reader, uninfluenced by prejudice or ſyſtem, we ſhall ſtate ſome particulars on this ſubject, from the authority of a writer of acknowledged genius, learning, and induſtry,—Lord Monboddo.

" Pliny ſays that the ambaſſadors to Auguſtus from Gaul declared that ſuch ſea-women were often ſeen in their neighbourhood.

" Theodorus Gaza relates, " that when he was in the Morea, ſuch a woman was driven on that coaſt by a violent ſtorm; that he ſaw her, and ſhe was very well looked; that ſhe ſighed, and ſeemed very much concerned when a number of people came round her; that he had pity on her, and cauſed the people to ſtand at a diſtance; that ſhe profited by the opportunity; and by the help of her fins and rolling, ſhe got into the water, and got off."

" Georgius Trapanzantius ſays, " he ſaw from the ſea-ſhore ſuch a mermaid, very handſome, appear ſeveral times above water; and in Epirus a ſea-man was caught, with ſome difficulty, but which never could be prevailed upon to eat.

" Bartholinus, in his *Centuria Hiſtoriarum Anat. Var.* printed in 1654, informs us, that in his time one of theſe creatures was caught upon the coaſt of Brazil, and taken to Leyden, and there diſſected:—he ſays it was in the form of a woman down to the waiſt.

" Ludoricus Vives declares, that in his time a ſea-man was taken in Holland, and carefully preſerved for two years, but at laſt made its eſcape and got into the ſea.—The Portugueſe ſpeak of mermaids as a common thing on the coaſts of Zofala and Moſambique.

But paſſing by a cloud of witneſſes, continues his Lordſhip, of remoter periods, we have a hiſtorian of our own times, who adds reſpectable confirmation to the opinion that ſuch creatures do exiſt:—Mr. Valentin, miniſter of the goſpel at Amboyna, a perſon eſteemed by the Dutch of Batavia, among whom he lived ſeveral years, as a man of perfect veracity; he has collected many circumſtances relating

relating to mermaids, which ſhew him to have been learned, curious, and induſtrious. After many relations from reading and hearſay, he declares what he ſaw himſelf on his voyage from Batavia to Europe, in the year 1714.

"In 12 deg. 38 min. ſouth latitude, on the firſt day of May, about eleven o'clock in the forenoon, I, the captain, purſer, and mate of the ſhip, and a great many of the ſhip's company, it being very calm, and the ſea ſmooth as glaſs, ſaw, about the diſtance of thrice the length of the ſhip from us, very diſtinctly on the ſurface of the water, ſeemingly ſitting with his back to us, and half the body above the water, a creature of a grizliſh or grey colour, like that of a cod-fiſh ſkin. It appeared like a ſailor, or a man ſitting on ſomething; and the more like a ſailor, as on its head there ſeemed to be ſomething like an Engliſh cap of the ſame grey colour: he ſat ſomewhat bent, and we obſerved him to move his head from one ſide to the other upwards of five and twenty times; ſo that we all agreed it muſt certainly be ſome ſhipwrecked perſon. I, after looking ſometime, begged the captain to order them to ſteer the ſhip more directly towards it, being ſomewhat on the ſtarboard ſide, which was done ac-

cordingly; and we had got within a ſhip's length of him, when the people on the fore-caſtle made ſuch a noiſe, that he plunged down head foremoſt, and got preſently out of our ſight; but the man who was on the watch at the maſt-head declared that he ſaw him for the ſpace of 200 yards, and that he had a very long tail."

"In 1716, in the month of January, a ſea-man appeared near Raguſa, a ſmall city on the Adriatic ſea. The accounts given by the various perſons who ſaw it, and publiſhed in the newſpapers of that time, are ſo uniformly the ſame, that there is no room left to queſtion the veracity of the ſtory.

"But the moſt ſubſtantial ſtory of all, and with which I ſhall diſmiſs the ſubject, is that of a ſea-man that was ſeen by the whole crew of a French ſhip off the coaſt of Newfoundland, in the year 1720, for two hours together, and often at the diſtance of not more than two or three feet. The account was drawn up by the pilot of the veſſel, and ſigned by the captain and all thoſe of the crew who could write, and was ſent from Breſt by Monſieur Hautefort to the Compte de Maurepas, on the 8th of September 1725. The ſtory is told with ſo many

many circumſtances, that it is impoſſible there can be any deception or miſtake in the caſe; but if it be not true, it is as plauſible and impudent a forgery as ever was attempted to be impoſed on the public."

In a very ſcarce pamphlet, entitled, "a diſcourſe and diſcovery of Newfoundland, by Captain Richard Whitbourne, printed in 1662, we have the following particulars relative to this diſputed animal:—"As there are others that have written of theſe creatures, obſerves Mr. Whitbourne, I have preſumed to relate what I have ſeen, and is moſt certainly true.

"In the morning early, as I was ſtanding by the river's ſide in the harbour of St. John's, in Newfoundland, a ſurpriſing creature came very ſwiftly ſwimming towards me, looking cheerfully on my face; it was like a woman by the face, eyes, noſe, mouth, chin, ears, neck and forehead. Round the head it had many blue ſtreaks reſembling hair, but certainly it was not hair. Yet I beheld it long, and another of my company alſo. At its approach I ſtepped back, for it was come within the length of a log pike of me, ſuppoſing it would have ſprung on land to me; and by its actions I verily

I verily believe it had ſuch a purpoſe;—but when it ſaw that I went from it, it did thereupon dive a little under water, and ſwam from the place where I had ſtood, often looking back towards me, whereby I beheld the ſhoulders and back, down to the middle, to be as ſquare, white and ſmooth as the back of a man; and from the middle to the hinder part it was pointing in proportion ſomething like a broad hooked arrow.—How it was in the fore part from the neck and ſhoulders downwards, I could not diſcern."

Not to multiply extracts or quotations on this ſubject, we ſhall only obſerve that ſuch a creature as alluded to was exhibited at the fair at St. Germain's, in 1759, from which a drawing was made and publiſhed by the celebrated Gautier. Another was found among the rocks in the iſland of Noirmoutier, in June, 1761, of which a particu ar deſcription was given in the *Mercure de France*; and ſeems to eſtabliſh the fact that ſuch animals (or monſters, if the Reader pleaſes) do exiſt.

The *Syrens* of antiquity, and of the poets, are no other than the mermaids of the moderns. *Artedi*, a very ſenſible naturaliſt, ſuppoſes them to conſtitute a peculiar genus of cetaceous fiſh; and

and wiſhes for an opportunity of ſeeing and examining them accurately;—though he is not attached to the belief of their exiſtence, he candidly remarks, "that it is better not to judge of a thing not ſeen, than to pronounce any thing raſhly againſt the accounts of reſpectable authors."

CETACEOUS FISH.

THIS diviſion comprehends three genera;

1. The WHALE.
2. The CHACALOT, PHYSETER, or SPERMACETI WHALE.
3. The DOLPHIN.

We are informed by the learned Johnſon that by the term *Cetus* the antients underſtood every ſpecies of fiſh of very large and unwieldy kind. Nature has beſtowed on this claſs of animals an internal ſtructure perfectly correſponding with that of quadrupeds; and in a few, even the external parts are very ſimilar:—ſo much ſo indeed, that *Linnæus* has placed this tribe

tribe among his *mammalia*, or what other writers call quadrupeds: though to have preſerved his chain of beings entire, he ſhould have made his genus of *phocæ* or *ſeals*, and that of the *tricheus* immediately precede the whale; the ſeal being, in reſpect of its legs, the moſt imperfect quadruped; while the hind feet of the *manati* coaleſcing, aſſume the form of a broad horizontal tail.—This horizontal, or flat ſituation of the tail, in reſpect of the body, is peculiar to the whale, and diſtinguiſhes it from the other claſſes; it alſo enables the fiſh to force themſelves ſuddenly to the ſurface of the water to breathe, which they are frequently conſtrained to do;—ſo often, indeed, as every two or three minutes; when they alſo ſpout out through their only noſtril the water they had ſucked in while gaping for their prey; though they have many peculiarities in common with land animals, there ſtill remain others which render it more natural to place them in the rank of fiſh:—the form of their bodies agrees with that of fiſh;—they are entirely naked, or covered only with a ſmooth ſkin; they live conſtantly in the water, and have all the actions of fiſh.

The cetaceous tribe like land animals breathe by means of lungs, being deſtitute of gills.

gills. This obliges them to riſe frequently on the ſurface of the water to reſpire, to ſleep, and to perform ſeveral other functions: they have alſo a midriff, a ſtomach, inteſtines, liver, ſpleen, and bladder;—the heart alſo reſembles that of quadrupeds: its partitions are cloſed up as in them, and propelling warm red blood in circulation through the body; and as a protection to keep theſe parts from the cold, their bodies between the ſkin and muſcles are entirely ſurrounded with a thick layer of fat or blubber, analogous to the lard on hogs.—They are furniſhed with the organs of generation, copulate, bring forth their young, and ſuckle them like land animals, whom they alſo reſemble in their appetites and affections, eſpecially in their tenderneſs of attachment to their young.

But it is in the circumſtances attending the propagation of their ſpecies, that the cetaceous claſs of fiſh ſhew an eminent and diſtinguiſhing ſuperiority. The ſpinous and cartilaginous, after depoſiting their ſpawn, leave its maturation to accident;—but the claſs we are ſpeaking of diſcharge the parental office with much apparent ſentiment:—they never produce above one young, or two at the moſt, and this the mother ſuckles in the manner of quadrupeds, her

breaſts being placed, as in the human kind above the navel.

The number of fins on this tribe never exceed three, viz. two pectoral and one dorſal; though in ſome ſpecies the laſt is wanted. The fins of other fiſh are formed of ſtraight ſpines; but thoſe of the cetaceous tribe are made up of bones and muſcles; and the ſkeleton of one of them very much reſembles the ſkeleton of the human hand. The peculiarity of the tail has been already noticed. Their ſenſes appear much ſuperior to moſt of the aquatic animals, particularly thoſe of ſight and hearing; and it may be remarked, that, beſides their known attachment to their progeny, they are much leſs inimical to the human race than many of the lower orders of their companions of the deep.

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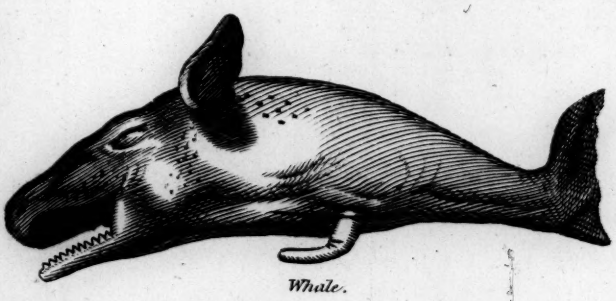
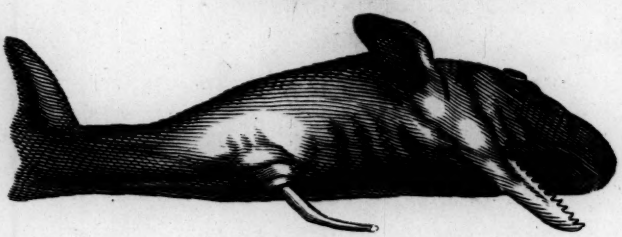


Whale.

Nar Whale or Sea Unicorn.



Spermaceti Whale.

THE WHALE.

THE characters of this genus are, a horny plate on the upper jaw, inſtead of teeth; and a double fiſtula or pipe for throwing out water. The ſpecies are four, viz.

1. The *Myſticetus*, or common whale, which has many turnings and windings in its noſtrils, and has no fin on the back. This is the largeſt of all animals; it is even at preſent ſometimes found in the northern ſeas 90 feet in length; but formerly they were taken of a much greater ſize, when the captures were leſs frequent, and the fiſh had time to grow. Such is their bulk within the arctic circle; but in thoſe of the torrid zone, where they are unmoleſted, whales are ſtill ſeen 160 feet long. The head is very much diſproportioned to the ſize of the body, being one third the ſize of the fiſh; the under lip is much

broader than the upper. The tongue is compoſed of a ſoft ſpungy fat, capable of yielding five or ſix barrels of oil. The gullet is very ſmall for ſo vaſt a fiſh, not exceeding four inches in width.

In the middle of the head are two orifices, through which it ſpouts water to a vaſt height, and with a great noiſe, eſpecially when diſturbed or wounded. The eyes are not larger than thoſe of an ox, and when the chryſtalline humour is dried, it does not appear larger than a pea. They are placed towards the back of the head, being the moſt convenient ſituation for enabling them to ſee both before and behind; as alſo to ſee over them, where their food is principally found. They are guarded by eye-lids and eye-laſhes, as in quadrupeds, and they ſeem to be very ſharp-ſighted.

Nor is their ſenſe of hearing in leſs perfection; for they are warned at great diſtances of any danger preparing againſt them. It would ſeem as if Nature had deſignedly given them theſe advantages, as they multiply little, in order to continue their kind. It is true, indeed, that the external organ of hearing is not perceptible, for this might only embarraſs them in

their natural element; but as ſoon as the thin ſcarf-ſkin above mentioned is removed, a black ſpot is diſcovered behind the eye, and under that is the auditory canal, that leads to a regular apparatus for hearing. In ſhort, the animal hears the ſmalleſt ſounds at very great diſtances, and at all times, except when it is ſpouting water, which is the time when the fiſhermen approach to ſtrike it.

What is called *whale-bone*, adheres to the upper jaw, and is formed of their parallel laminæ, ſome of the longeſt are four yards in length. Of theſe there are commonly 350 on each, but in very old fiſh more; about 200 of them are of a length fit for uſe, the others being too ſhort. They are ſurrounded with long ſtrong hair, not only that they may not hurt the tongue, but as ſtrainers to prevent the return of their food when they diſcharge the waters out of their mouths. The real bones of the whale are hard, porous, and full of marrow. Two great ſtrong bones ſuſtain the upper lip, lying againſt each other in the ſhape of an half-moon.

The tail is broad and ſemi-lunar; and when the fiſh lies on one ſide, its blow is tremendous. The tail alone it makes uſe of to advance

vance itſelf forward in the water; and it is ſurprizing to ſee with what force and celerity its enormous bulk cuts through the ocean. The fins are only made uſe of for turning in the water, and giving a direction to the velocity impreſſed by the tail. The female alſo makes uſe of them, when purſued, to carry off her young, clapping them on her back, and ſupporting them by the fins on each ſide from falling.

The whale varies in colour; the back of ſome being red, the belly generally white. Others are black, ſome mottled, others quite white, according to the obſervation of Martin, who ſays, "that their colours in the water are extremely beautiful, and their ſkin is very ſmooth and ſlippery." The outward or ſcarf ſkin of the whale is not thicker than parchment; but this removed, the real ſkin appears of about an inch thick, and covering the fat or blubber that lies beneath: this is from eight to twelve inches in thickneſs; and is, when the fiſh is in health, of a beautiful yellow. The muſcles lie beneath, and theſe, like the fleſh of quadrupeds, are very red and rough. The penis is eight feet in length, incloſed in a ſtrong ſheath. The teats in the female are placed in the lower part of the belly.

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In copulation the female joins with the male, and once in two years, as it is aſſerted, ſhe feels the acceſſes of deſire. Their fidelity to each other exceeds whatever we are told of even the conſtancy of birds. Some fiſhermen, as Anderſon informs us, having ſtruck one of two whales, a male and a female, that were in company together, the wounded fiſh made a long and terrible reſiſtance; it ſtruck down a boat with three men in it, with a ſingle blow of its tail, by which all went to the bottom. The other ſtill attended its companion, and lent it every aſſiſtance, till, at laſt, the fiſh that was ſtruck, ſunk under the number of its wounds, whilſt its faithful aſſociate, diſdaining to ſurvive the loſs, with great bellowing, ſtretched itſelf upon the dead fiſh, and ſhared his fate.

The whale goes with young nine or ten months, and is then fatter than uſual, particularly when near the time of bringing forth. It is ſaid, that the embryo, when firſt perceptible, is about 17 inches long, and white; but the cub, when excluded, is black, and about ten feet long. She generally produces one young one, and never above two. When ſhe ſuckles her young, ſhe throws herſelf on one

one ſide on the ſurface of the ſea, and the young attaches itſelf to the teat.

Nothing can exceed the tenderneſs of the female for her offſpring, which ſhe carries with her wherever ſhe goes, and, when hardeſt purſued, keeps it ſupported between her fins. Even when wounded, ſhe ſtill claſps her young one, and when ſhe plunges to avoid danger, takes it to the bottom, but riſes ſooner than uſual, to give it breath again. In Waller's poem of the Summer Iſlands there is a ſtory, founded on hiſtorical authority, to ſhew the maternal attachment and tenderneſs of theſe creatures; which, inſtead of the poetical extract, we ſhall abridge nearly in the words of Goldſmith:

"A whale and her cub had got into an arm of the ſea, where, by the defection of the tide, they were entirely encloſed. The people on ſhore beheld their ſituation, and drove down upon them in boats, with ſuch weapons as could be haſtily collected. The animals were ſoon ſeverely wounded, and the ſea tinged with their blood. After ſeveral attempts to eſcape, the old one forced over the ſhallow into the depths of the ocean. But though in ſafety herſelf, ſhe could not bear the danger that awaited her young

young one; ſhe therefore ruſhed in once more where the ſmaller animal was confined, and reſolved, when ſhe could not protect, at leaſt to ſhare its danger. The ſtory concludes with poetical juſtice:---for the tide coming in, enabled both to eſcape from their enemies, though not without ſuſtaining an infinite number of wounds in every part."

The young one continues at the breaſt for a year, during which time, they are called by the ſailors, *ſhort-heads*. They are then extremely fat, and yield above fifty barrels of blubber.

The mother at the ſame time is equally lean and emaciated. At the age of two years they are called *ſtunts*, as they do not thrive much immediately after quitting the breaſt; they then yield ſcarce above 20 or 24 barrels of blubber: from that time forward they are called *ſheill-fiſh*, and their age is wholly unknown.

Every ſpecies of whale propagates only with thoſe of its kind, and does not at all mingle with the reſt; however, they are generally ſeen in ſhoals, of different kinds together, and make their migrations in large companies from one ocean to another. They are gregarious

animals: which implies the want of mutual defence againſt the invaſions of ſmaller, but more powerful fiſh. It ſeems aſtoniſhing, therefore, how a ſhoal of theſe enormous animals find ſubſiſtence together, when it would ſeem that the ſupplying even one with food, would require greater plenty than the ocean could furniſh. To increaſe our wonder, we not only ſee them herding together, but uſually find them fatter than any other animals of whatſoever element. We likewiſe know that they cannot ſwallow large fiſh, as their throat is ſo narrow, that an animal larger than a herring could not enter. How then do they ſubſiſt and grow ſo fat? A certain ſort of ſmall fiſh, or (as Linnæus ſays) the meduſa, galley-fiſh, or ſea-lobſter, is ſufficient for this ſupply. Content with this ſimple food, it purſues no other animal, leads an inoffenſive life in its element, and even is harmleſs in proportion to its ſtrength to do miſchief.

As the whale is an inoffenſive animal, it is not to be wondered that it has many enemies, willing to take advantage of its diſpoſition, and inaptitude for combat. There is a ſmall animal of the ſhell-fiſh kind, called the *whale-louſe*, that ſticks to its body, as we ſee ſhells

ſticking

ſticking to the foul bottom of a ſhip. This inſinuates itſelf chiefly under the fins; and whatever efforts the great animal makes, it ſtill keeps its hold, and lives upon the fat, which it is provided with inſtruments to arrive at.

The *Sword fiſh*, and a ſpecies of ſqualus, called the *Threſher*, are, next to the human race, the moſt terrible enemies to the whale. The latter keeps on the back of the whale, while the former wounds it underneath in the belly, which occaſions him to riſe to the ſurface of the water, and to give the threſher an opportunity of aſſiſting in the combat. This he does by throwing himſelf into an erect poſture, and like a boy tumbling neck over heels, falls down with aſtoniſhing force on the back of his prey; and thus they go on till the poor whale is deſtroyed. The grampus, and other large fiſh of the cetaceous order, are attacked and deſtroyed by the ſame enemies in a ſimilar manner.

The whale has another deſperate enemy, a kind of ſhark, of different ſizes, from ſix feet to eighteen in length; ſo voracious, that it tears large pieces of fleſh from the whale, as if they had been dug with ſhovels.

The *fin fiſh* is diſtinguiſhed from the common whale by a fin on the back, placed very low and near the tail. The length is equal to that of the common kind, but much more ſlender. It is furniſhed with whale-bone in the upper jaw mixed with coarſe hair, but ſhort, knobby, and of little value. The blubber in the body is very inconſiderable; it is extremely fierce, and the capture of it both difficult and dangerous, on which account it is entirely neglected by the fiſhermen, who, on its appearance, retire out of thoſe ſeas.

The natives of Greenland, however, hold it in much eſteem, as it affords a quantity of fleſh which, to their palate, is very agreeable. The lips are brown, and like a twiſted rope; the ſpout-hole appears to be ſplit in the top of its head, through which it blows its water with much more violence, and to a greater height, than the common whale.

The *Boops*, or pike-headed whale, has a double pipe in its ſnout, three fins like the former, and a hard horny ridge on its back; and the belly is full of longitudinal folds. This ſpecies takes its name from the ſhape of its noſe, which is narrower and ſharper-pointed than

than that of the other whales. It has been taken on the coaſt of Scotland of the length of 46 feet, and 20 in circumference.

The *Muſculus* has a double pipe in its front, and three fins; the under jaw is much wider than the upper one. It is frequently found along the coaſts of Scotland, and feeds upon herrings.

The *Nar Whale*, *Monodon*, or *Sea Unicorn*, as it is frequently termed, differs from the foregoing ſpecies moſt materially by its large teeth pointing directly forward from the upper jaw, from nine to fourteen feet in length; and of all the weapons with which the marine animals are gifted, this is doubtleſs the moſt formidable. The narwhale is ſeldom ſo long as the common whale, much ſlenderer, and leſs abounding in blubber: in other reſpects their manners and appetites are perfectly ſimilar; they are harmleſs, peaceable, and rather avoid than ſeek contention. They are gregarious, and ſeldom found alone; but ſo rapid in their flight, that they could ſeldom be taken but for thoſe very teeth which ſeem intended for their chief defence; for when attacked in a crowd, they are ſo embarraſſed and locked together

together by their tuſks that ſome are certain of falling a prey to the fiſhermen.

This weapon is ſufficiently ſingular to deſerve a minute deſcription. It is commonly ſtraight as an arrow, about eight or ten inches in thickneſs, generally wreathed as we ſometimes ſee twiſted bars of iron, and is whiter, heavier, and harder than ivory, which it far ſurpaſſes in all its qualities; and the extreme length of them has induced naturaliſts to conſider them rather as horns than teeth, though in every reſpect reſembling the tuſks of the boar and the elephant. It ſprings from the left ſide of the head, from a ſocket in the upper jaw, into which its root enters above a foot and a half, and darts directly forward in a line with the body.

The animal is generally found with but one of theſe dreadful inſtruments: yet in the Stadthouſe at Amſterdam, as well as at Hamburgh, there is to be ſeen the ſkull of a narwhale, in each of which there are two teeth, which tends to contradict the opinion that the animal is furniſhed but with one; and gives room for the belief that the nar whale's wanting a tooth, is an accident in conſequence of the encounters it may be

be ſuppoſed to be engaged in. Nor is this defenſive weapon confined to the male ſex, as both have been found armed in the ſame manner. The teeth which are preſerved in a ſkull at Hamburgh are each above ſeven feet long, and eight inches in circumference.

Before the act of catching whales was known to Europeans, this tooth was deemed a rarity worth extraordinary purſuit, though ſeldom met with but by accident, and then attributed to a wrong owner, namely the unicorn of the ancients. The error is, however, at preſent ſufficiently well detected, and the curioſity is held in its proper degree of eſtimation.

With all the powers of deſtruction, with dreadful weapons, amazing ſtrength, and matchleſs celerity, the narwhale is one of the moſt peaceable inhabitants of the ocean; and in conſequence of his ſocial diſpoſition is beheld inoffenſively ſporting among the monſters of the deep, without making war on any living creature; and even ſo regardleſs of his own weapons, that they are generally found covered with the filth of the ſea, and rather becoming an impediment than a defence.

The Greenlanders, as well as our own fiſhermen, call the narwhale the forerunner of the whale,

whale, for wherever it is ſeen, the whale is ſhortly after ſure to follow. A circumſtance ariſing no doubt from their both living on the ſame ſort of food, which is the inſect, or fiſh, (for writers are not agreed in which claſs it ſhould be placed) that has already been mentioned.

In the Philoſophical Tranſactions, No. 447, we have a deſcription of a narwhale caught in the year 1736, in the river Oſte, in Germany, four German miles from the ſea. "The ſkin of this fiſh was ſpotted with dark brown ſpots upon a white ground; the epidermis was tranſparent, and under it was another ſkin, very thin and ſpotted, but the true ſkin was brown, and near an inch in thickneſs. The body was ſmooth and ſlippery, like that of an eel; twenty feet long, and about four feet in diameter; but the head ſmall in proportion, not exceeding ſixteen inches in length, and the eyes not bigger than a ſixpence.

Among other uſes for which the horn of this animal may be intended, is mentioned that of breaking the ice for the purpoſe of obtaining air, and which is a very probable conjecture."

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END OF THE THIRD VOLUME.